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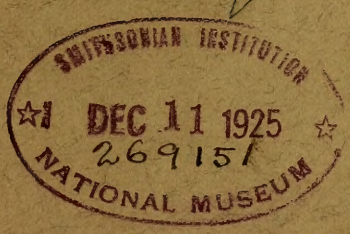
REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

1925



SMITHSONIAN INSTITUTION
WASHINGTON, D. C.

REPORT OF THE SECRETARY OF THE SMITHSONIAN INSTITUTION

FOR THE YEAR ENDING JUNE 30

1925

(Publication 2834)

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

REPORT OF THE SECRETARY

OF THE SMITHSONIAN

INSTITUTION

CONTENTS

CONTENTS

THE SMITHSONIAN INSTITUTION

June 30, 1925

Presiding officer ex officio.—Calvin Coolidge, President of the United States.

Chancellor.—William Howard Taft, Chief Justice of the United States.

Members of the Institution:

Calvin Coolidge, President of the United States.
Charles G. Dawes, Vice President of the United States.
William Howard Taft, Chief Justice of the United States.
Frank B. Kellogg, Secretary of State.
Andrew W. Mellon, Secretary of the Treasury.
John Wingate Weeks, Secretary of War.
John G. Sargent, Attorney General.
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Curtis D. Wilbur, Secretary of the Navy.
Hubert Work, Secretary of the Interior.
William M. Jardine, Secretary of Agriculture.
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James John Davis, Secretary of Labor.

Regents of the Institution:

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George Wharton Pepper, Member of the Senate.
Woodbridge N. Ferris, Member of the Senate.
Albert Johnson, Member of the House of Representatives.
R. Walton Moore, Member of the House of Representatives.
Walter H. Newton, Member of the House of Representatives.
George Gray, citizen of Delaware.
Charles F. Choate, Jr., citizen of Massachusetts.
Henry White, citizen of Washington, D. C.
Robert S. Brookings, citizen of Missouri.
Irwin B. Laughlin, citizen of Pennsylvania.
Frederic A. Delano, citizen of Washington, D. C.

Executive committee.—George Gray, Henry White, Frederic A. Delano.
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Assistant Secretary.—Alexander Wetmore.
Chief clerk.—Harry W. Dorsey.
Accounting and disbursing agent.—N. W. Dorsey.
Editor.—W. P. True.
Librarian.—William L. Corbin.
Appointment clerk.—James G. Traylor.
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Assistant Secretary (in charge).—Alexander Wetmore.

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Curators.—Paul Bartsch, R. S. Bassler, T. T. Belote, Austin H. Clark, F. W. Clarke, F. V. Coville, W. H. Dall, Walter Hough, L. O. Howard, Aleš Hrdlička, Neil M. Judd, Frederick L. Lewton, George P. Merrill, Gerrit S. Miller, Jr., Carl W. Mitman, Robert Ridgway, Waldo L. Schmitt, Leonhard Stejneger.

Associate curators.—J. M. Aldrich, C. W. Gilmore, W. R. Maxon, Charles W. Richmond, J. N. Rose, David White.

Chief of correspondence and documents.—H. S. Bryant.

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NATIONAL GALLERY OF ART

Director.—William H. Holmes.

FREER GALLERY OF ART

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Associate curator.—Carl Whiting Bishop.

Assistant curator.—Grace Dunham Guest.

Associate.—Katharine Nash Rhoades.

Superintendent.—John Bundy.

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Chief.—J. Walter Fewkes.

Ethnologists.—John P. Harrington, J. N. B. Hewitt, Francis La Flesche, Truman Michelson, John R. Swanton.

Editor.—Stanley Searles.

Librarian.—Ella Leary.

Illustrator.—De Lancey Gill.

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Assistant Superintendent.—A. B. Baker.

ASTROPHYSICAL OBSERVATORY

Director.—C. G. Abbot.

Aid.—F. E. Fowle, Jr.

Assistant.—L. B. Aldrich.

REGIONAL BUREAU FOR THE UNITED STATES, INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE

Assistant in charge.—Leonard C. Gunnell.

REPORT

OF THE

SECRETARY OF THE SMITHSONIAN INSTITUTION

CHARLES D. WALCOTT

FOR THE YEAR ENDING JUNE 30, 1925

To the Board of Regents of the Smithsonian Institution:

GENTLEMEN: I have the honor to submit herewith the customary annual report showing the activities and condition of the Smithsonian Institution and the Government bureaus under its administrative charge during the fiscal year ending June 30, 1925. The first 27 pages of the report contain an account of the affairs of the Institution, and in appendixes 1 to 10 are given more detailed summaries of the operations of the United States National Museum, the National Gallery of Art, the Freer Gallery of Art, the Bureau of American Ethnology, the International Exchanges, the National Zoological Park, the Astrophysical Observatory, the United States Regional Bureau of the International Catalogue of Scientific Literature, the Smithsonian Library, and of the publications issued under the direction of the Institution.

THE SMITHSONIAN INSTITUTION

THE ESTABLISHMENT

The Smithsonian Institution was created by act of Congress in 1846, according to the terms of the will of James Smithson, of England, who in 1826 bequeathed his property to the United States of America, "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." In receiving the property and accepting the trust, Congress determined that the Federal Government was without authority to administer the trust directly, and therefore constituted an "establishment" whose statutory members are "the President, the Vice President, the Chief Justice, and the heads of the executive departments."

THE BOARD OF REGENTS

The affairs of the Institution are administered by a Board of Regents whose membership consists of "the Vice President, the Chief Justice, three Members of the Senate, and three Members of the House of Representatives, together with six other persons other than Members of Congress, two of whom shall be resident in the city of Washington, and the other four shall be inhabitants of some State, but no two of them of the same State." One of the Regents is elected chancellor by the board; in the past the selection has fallen upon the Vice President or the Chief Justice; and a suitable person is chosen by the Regents as secretary of the Institution, who is also secretary of the Board of Regents and the executive officer directly in charge of the Institution's activities.

The following changes occurred in the personnel of the board during the year: The Hon. Charles G. Dawes, as Vice President, became on March 4, 1925, a Regent of the Institution ex officio. Senator Reed Smoot, of Utah, was appointed a Regent on December 2, 1924, to succeed Senator Henry Cabot Lodge, deceased. Senator George Wharton Pepper, of Pennsylvania, was appointed a member of the board on December 3, 1924, to succeed Senator Medill McCormick, resigned. Senator Woodbridge N. Ferris, of Michigan, was appointed on March 11, 1925, to succeed Senator A. Owsley Stanley, whose term as a Regent expired with his retirement from the Senate.

The roll of Regents at the close of the fiscal year was as follows: William H. Taft, Chief Justice of the United States, chancellor; Charles G. Dawes, Vice President of the United States; members from the Senate, Reed Smoot, George Wharton Pepper, Woodbridge N. Ferris; members from the House of Representatives, Albert Johnson, R. Walton Moore, Walter H. Newton; citizen members, George Gray, Delaware; Charles F. Choate, jr., Massachusetts; Henry White, Washington, D. C.; Robert S. Brookings, Missouri; Irwin B. Laughlin, Pennsylvania; and Frederic A. Delano, Washington, D. C.

GENERAL CONSIDERATIONS

The past year marks a crisis in the affairs of the Institution. For several years past it has grown more and more difficult to stretch the income from its meager endowment sufficiently to cover the steadily increasing costs of even the limited amount of research which can be undertaken and of the administration of the eight growing Government bureaus. The cost of publishing is more than twice that of 10 years ago, which has resulted in materially decreasing the output of Smithsonian publications. The research work of the Institution is now limited practically to the paleontological

work of your secretary and the work on the solar constant of radiation under Doctor Abbot's direction, and both of these investigations are partially supported by private financial aid. The Institution has for several years been undermanned, and the ordinary running expenses are met only by the exercise of rigid economy.

This condition has been recognized for some years, and attempts have been made from time to time to increase the endowment. But during the past year the situation has become acute, and it has been realized that without a marked increase in the Institution's resources it would no longer be able to hold its place among the great research institutions of the present day, the annual income of several of which is greater than the Smithsonian's entire endowment. If allowed to go on under these circumstances, the Smithsonian, America's national scientific establishment, which was the guiding light during the formative period of scientific activity in this country, and which has been the parent of most of the present great scientific bureaus of the Government, would be relegated to second or third rank, and its world-wide reputation as a center of scientific effort in America would rapidly diminish.

With a definite realization of these facts, the administration of the Institution has concentrated during the year upon a direct effort to increase its resources, and by the close of the year several plans were under way and one definite step had been taken toward that end. An agreement was entered into with the William T. De Van Corporation, of New York, to issue a series of popular scientific books, to be known as the Smithsonian Scientific Series, a project similar in general plan to the Chronicles of America series, published by the Yale University Press, which proved so successful under Mr. De Van's direction. In the Smithsonian series it is intended to present in readable form, and profusely illustrated, the activities of the Institution and the bureaus under its direction in many branches of science. The series will consist of 20 volumes, and the following tentative titles of a few will indicate their nature:

Sun-Rays in the Welfare of Man.
Man's Origin and Development.
Gems, Meteorites, and Stones.
North American Indians.
The Study of Our Seas.
Birds and Their Ways.

The preparation of manuscripts was well under way at the close of the year, and it is hoped that before very long the sale of these books will add materially to the Institution's annual income. Two other projects, each holding promise of a large increase of endowment, were under consideration, but final action had not been taken by June 30, and their discussion at this time would be premature.

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However, it is believed that as a result of the concerted effort of the administration the outlook for the future is brighter regarding the possibility of increased resources for research and publication.

FINANCES

The permanent investments of the Institution consist of the following:

Deposited in the Treasury of the United States $1,000,000.00

CONSOLIDATED FUND

Miscellaneous securities, etc., either purchased or acquired by gift; cost or value at date acquired 213,386.50

Charles D. and Mary Vaux Walcott research fund, stock (gift); value 11,520.00

The sums invested for each specific fund or securities, etc., acquired by gift are described as follows:

Fund	United States Treasury	Consolidated fund	Walcott research fund	Total
Avery fund	$14,000.00	$32,669.55		$46,669.55
Virginia Purdy Bacon fund		62,272.93		62,272.93
Lucy H. Baird fund		1,528.09		1,528.09
Chamberlain fund		35,000.00		35,000.00
Habel fund	500.00			500.00
Hamilton fund	2,500.00	500.00		3,000.00
Caroline Henry fund		1,223.33		1,223.33
Hodgkins fund, general	116,000.00	37,275.00		153,275.00
Hodgkins fund, specific	100,000.00			100,000.00
Bruce Hughes fund		13,839.90		13,839.90
Morris Loeb fund		5,814.00		5,814.00
Lucy T. and George W. Poore fund	26,670.00	14,183.14		40,853.14
Addison T. Reid fund	11,000.00	6,639.16		17,639.16
Rhees fund	590.00	357.34		947.34
George H. Sanford fund	1,100.00	615.32		1,715.32
Smithson fund	727,640.00	1,468.74		729,108.74
Charles D. and Mary Vaux Walcott research fund			$11,520.00	11,520.00
Total	1,000,000.00	213,386.50	11,520.00	1,224,906.50

The Institution gratefully acknowledges gifts from the following donors:

Dr. William L. Abbott, for botanical expedition to Haiti.

The Buffalo Society of Natural Sciences, for expedition to Southern Asia, Java, Australia, and Africa (Hrdlička).

National Academy of Sciences, for researches in paleontology.

Research Corporation, for research work.

Dr. Charles W. Richmond and Dr. William Schaus, for collecting expedition in China.

Mr. John A. Roebling, for solar researches, etc.

Mr. B. H. Swales, for purchase of specimens.

The Institution has also received contributions from the following friends for the funds as listed below:

General endowment fund: Miss Anne C. Hanson, Mr. R. B. Miller, Mr. R. S. Poor, Prof. M. V. Walker and Mr. Hans Wilkins.

Endowment campaign expense fund: Mr. Milton E. Ailes, Mr. Charles F. Choate, Jr., Mr. Charles C. Glover, Mr. Irwin B. Laughlin, and the Hon. William Howard Taft.

Smithsonian Scientific Series: Mrs. Martha W. Bacon, Mr. Edward H. Harkness, Mr. Clarence H. Mackay, the Radio Corporation of America, and Mr. Samuel Rea.

Freer Gallery of Art.—The invested funds of the Freer bequest are classified as follows:

Court and grounds fund	$278,825.50
Court and grounds, maintenance fund	69,683.75
Curator's fund	278,825.50
Residuary legacy	2,676,232.75
Sinking fund	222,658.75
Total	3,526,226.25

The practice of depositing on time, in local trust companies and banks, such revenues as may be spared temporarily has been continued during the past year, and interest on these deposits has amounted to $1,610.15. The income during the year for current expenses, consisting of interest on permanent investments and other miscellaneous sources, amounted to $62,507.06. Revenues and principal of funds for specific purposes, except the Freer bequest, amounted to $148,252.88. Revenues on account of Freer bequest amounted to $231,073.64, aggregating a total of $441,833.58.

The disbursements, described more fully in the annual report of the executive committee, were classed as follows: General objects of the Institution, $59,921.20; for specific purposes (except the Freer bequest), $128,334.53; and expenditures pertaining to the Charles L. Freer bequest, $184,190.26. The balance on hand on June 30, 1925. was $171,952.75.

The following appropriations were made by Congress for the Government bureaus under the administrative charge of the Smithsonian Institution for the fiscal year 1925:

International exchanges		$49,550.00
American ethnology		57,160.00
International Catalogue of Scientific Literature		8,861.66
Astrophysical Observatory		21,580.00
Additional assistant secretary		6,000.00
Additional fire protection		8,500.00
National Museum:		
Furniture and fixtures	$21,800.00	
Heating and lighting	77,560.00	
Preservation of collections	434,482.00	
Building repairs	11,000.00	
Books	2,000.00	
Postage	450.00	
		547,292.00
National Gallery of Art		20,158.00
National Zoological Park		151,487.00
Printing and binding		90,000.00
Total		960,588.66

RESEARCHES AND EXPLORATIONS

An important part of the Institution's work in increasing scientific knowledge is the exploration of regions imperfectly known to science. Although the limited funds of the Institution sharply restrict the number of expeditions which it is able to put in the field, nevertheless it is often found mutually advantageous to cooperate with other agencies in field work, and the institution thus has an interest in a considerable number of expeditions each year. Many of them are conducted under the direct supervision of the heads of several of the bureaus under the Institution, and accounts of these will be found in the reports appended hereto on the National Museum, the Bureau of American Ethnology, and the Astrophysical Observatory. A few of the expeditions will here be described briefly in order to give an indication of the nature of the work undertaken.

GEOLOGICAL EXPLORATIONS IN THE CANADIAN ROCKIES

During the field season of 1924 your secretary carried on his usual geological work in the Canadian Rocky Mountains, with the intention of completing the reconnaissance begun some years ago of the pre-Devonian formations north of the Bow Valley. The weather was unusually unfavorable, and on forty-two days out of the season, it was very difficult and sometimes impossible to carry on the field-work. The chief problem attacked was the determination of the proper classification of the great Lyell limestones. In order to solve this it was necessary to find fossils in them, and during the past six seasons all such attempts were unsuccessful.

A section was measured from Fossil Mountain, situated northeast of Lake Louise station on the Canadian Pacific Railway, eastward into Oyster Mountain, the main north and south ridge of which was found to be formed of the Lyell limestones. Two glacial cirques, named Cotton Grass and Tilted Mountain, cut deeply into this ridge, and in these the base of the Lyell formation was uncovered, as well as the shales and oolitic limestones of the underlying Bosworth formation. The brook running out of the glacial lake in the bottom of the southern cirque was followed over the ledges of Lyell limestone westward to Tilted Mountain Falls, where it drops into the Canyon valley of upper Baker Creek. Everywhere the hard, unfossiliferous light gray limestone was encountered, except near the edge of the cliffs above and east of the falls, where long narrow strips covered with grass and trees occur between the north and south ledges. An approach was made from the southern bank of the brook, and on a rounded, glaciated ridge of the gray magnesian Lyell limestone there was found, interbedded in the Lyell, an outcrop of thin layers of a bluish-gray limestone which contained frag-

ments of Upper Cambrian trilobites. The next day these layers were traced back to the brook, and a little lower in the section we found two bands of shale and bluish-gray limestone which contained fossils. The lower of the two contained many fragments of trilobites, which were later identified as closely related to Upper Cambrian Franconia trilobites from Wisconsin, and the upper band contained fossils of the same type as the fauna of the St. Lawrence member of the Trempeauleau formation of Wisconsin. Thus after a search occupying a portion of several field seasons, fossils were found which definitely located the Lyell limestones as of Upper Cambrian age.

After the Lyell problem was definitely settled, further collections of fossils were made in the Ozarkian upper Mons limestones of Fossil Mountain, and later in the Mons formations of Wild Flower Canyon, which heads on Johnston Creek Pass.

During the past eight seasons considerable progress has been made in the understanding of the pre-Devonian geological formations and their faunas in the Canadian Rocky Mountains, but much remains to be done, particularly in the region between the Canadian Pacific Railway and the Arctic Ocean.

ZOOLOGICAL EXPLORATIONS IN WESTERN CHINA

In my last report mention was made of the tragic ending of the Institution's collecting expedition in China conducted under the auspices of Dr. W. L. Abbott. Mr. Charles M. Hoy, in charge of the work, following a series of misfortunes, was stricken with a severe case of appendicitis, and died shortly after. In order that Hoy's work might be continued, his collecting outfit was transferred to the Rev. David C. Graham, who for a number of years has collected zoological material in the vicinity of Suifu for the National Museum. In 1923 he had carried out very successful collecting operations in the region about Tatsienlu, to the northwest of Suifu, and in May, 1924, plans were completed for an expedition to Songpan, in the northern part of the Province of Szechwan, using Hoy's outfit.

The distance from Suifu to Songpan was about 400 miles, and in order to keep down expenses Mr. Graham covered most of this distance on foot. His party, including carriers, skinners, and other helpers, reached Songpan on July 14, after a strenuous journey of 22 days. In September Mr. Graham wrote as follows:

> The Songpan trip has been taken, and we are safely at Suifu with 50 boxes of specimens, most of which are about ready to be mailed by parcel post.
>
> This has been a harder and rougher trip than the one to Tatsienlu or any other previous trip. It is much harder to secure food and other necessities around Songpan than at Tatsienlu. There were times when we could pur-

chase no fruit, vegetables, eggs, or meat. At Songpan it was impossible to go west or north, where large mammals are found in abundance, so that the only place we could go was east to the Yellow Dragon Gorge. Even there we had to have an escort of six Chinese soldiers and had of course to pay all their expenses. * * *

The reason we could not go north of Songpan or west of that place was that the Bolotsi aborigines are so savage and so inclined to murder and brigandage that the Chinese can not control them and are afraid of them, and the officials could not protect us in those regions. Just before we returned from Songpan the Bolotsis attacked a company of Chinese soldiers, killed several of their number, stole several rifles, and drove the scared and defeated soldiers back to their barracks. I have not heard that the Chinese have dared to go into the Bolotsi country with a punitive expedition.

The catch of mammals is not large. We are very sorry about this. It is due primarily to the fact that the mammal-catching districts around Songpan were closed to us. Yellow Dragon Gorge was a fine place for birds and insects, but a great festival had just been held there, in which aborigine and Chinese hunters from all directions had joined in the chase, and woodcutters were busy in the woods cutting timber for the new temples that are being constructed. The mammals had been scared away.

Mr. Graham also sent native collectors out to work in other regions, and regarding their work he says:

This year's catch is bigger than that of last year. There are 50 boxes of specimens on hand, and I expect to send them off by parcel post as early as possible. Besides the 50 boxes just mentioned, there is the entire catch of the netter Ho for at least three months, who has been collecting about Beh Luh Din, Chengtu, and Kuanshien during the summer, and specimens now being secured by two collectors on Mount Omei, one at Shin Kai Si and one on the higher altitudes.

The collections resulting from the season's work include about 5,000 insects, notably two-winged flies, butterflies, and moths; 558 birds, of which at least a dozen proved to be new to the Museum collections; about 250 mollusks; and a smaller number of mammals, fishes, reptiles, and batrachians, earthworms, and plants.

BOTANICAL EXPLORATION IN PANAMA AND COSTA RICA

Mr. Paul C. Standley, associate curator of the division of plants, United States National Museum, engaged in botanical exploration during the latter part of 1923 and the first four months of 1924 in Panama and Costa Rica. The work in Panama was carried on with the cooperation of the government of the Panama Canal, and had for its purpose the collection of specimens and data for a report on the plant life of the Canal Zone which will be published later. Regarding the exploration in Panama, Mr. Standley writes:

Part of November, December, and most of January were spent in botanical exploration in and near the Zone. Nearly all parts of this area were visited, and 7,000 numbers of plants were obtained, represented by about twice as many specimens. These collections are now being studied and have been found to contain a number of species new to science, besides many not collected previously in the area.

The vegetation of the Zone is typical of that existing in Central America at low elevations, but it is here possible to study in close proximity the floras of the Atlantic and Pacific slopes, these floras being sharply differentiated in Central America because of differences in the climates of the two watersheds. The Pacific slope has well defined wet and dry seasons; on the Atlantic slope there is usually plentiful moisture throughout the year.

Although the original vegetation of the Isthmus of Panama has been greatly modified in many places because of long occupation by man, and especially because of operations incident to the construction and management of the canal, there remain near the canal extensive areas of virgin forest whose animal and plant life is of great interest. Advantage has been taken of this fact to establish recently a station for tropical scientific research on Barro Colorado Island in Gatun Lake, the island having been set aside for the purpose by the governor of the canal. Upon this island, largely as a result of the energy and enthusiasm of Mr. James Zetek, there has been constructed this year a laboratory building with accommodations for students, and trails have been cut to make the virgin forest, which covers several hundred acres, available for study.

From Panama Mr. Standley proceeded to Costa Rica, where he spent two and one-half months in botanical exploration and collecting. Costa Rica is, from a botanical standpoint, probably the richest part of the North American continent, and in the highland region, where a temperate rather than tropical climate prevails, the luxuriance and variety of the vegetation is extraordinary. Of the Costa Rica work, Mr. Standley reports:

The collection consists of 8,000 numbers of plants, many of which will doubtless prove to be new. Special attention was given to the orchids, of which about 1,500 numbers were obtained. These are now being studied by Mr. Oakes Ames, through whose interest the work in Costa Rica was undertaken. Of orchids Costa Rica possesses probably a larger number of species than any other portion of the American tropics of equal extent. Over 1,000 species have been reported from this small Republic, and it is certain that many more await discovery. While most Costa Rican orchids, like those of other countries, have inconspicuous flowers, some, such as the Cattleyas, are of unsurpassed beauty.

Visits were made to the Volcano of Poas, celebrated for its great crater, which contains a lake that erupts frequently; to the Volcano of Turrialba, whose forests are noted for their wealth of ferns; and to many other rich localities in the central highlands.

A short visit to the comparatively arid Pacific coast proved that the flora of this part of Costa Rica is relatively meager and uninteresting. Several visits were made to the wet lowland forests of the Atlantic watershed, where the vegetation is even more luxuriant than in the mountains and the species are almost equally numerous. Little is known of the plants of the Atlantic lowlands of Central America, although it is probable that no other region will better reward exploration.

ARCHEOLOGICAL EXPEDITION TO CHINA

An expedition to China under the joint auspices of the Freer Gallery of Art and the Museum of Fine Arts, Boston, and directed

by Mr. Carl Whiting Bishop, associate curator of the Freer Gallery, conducted successful archeological investigations at I Chou, Province of Chihli, and at various localities in the Province of Shensi. To the southwest of I Chou, which is built upon the ruins of an ancient city, Mr. Bishop discovered parts of old earthen walls of considerable size, and to the east of the city were found groups of large mounds rising from the plain. These were examined, and many fragments of pottery and tile collected on the surface of the mounds. A survey of the locality was made by airplane, in order to determine the extent and plan of the ancient site.

Although the work of this expedition commenced during the previous fiscal year, it was continued into the present year; and, as no detailed account was given in my last report, I will quote a few paragraphs from the report of the curator of the Freer Gallery upon the work at Shensi:

In Shensi the members of the field staff visited the Western Han (206 B. C.–A. D. 25) capital of Ch'ang-an, securing sufficient data while there to make a fair reconstruction of the ancient city. In the same Province they inspected also two large mounds of the usual truncated pyramidal form, ascribed to early Han emperors; the supposed tomb of the Emperor Ch'in Shih Huang-ti (221–210 B. C.), and the tombs of the famous Emperor Han Wu Ti (140–87 B. C.) and his General Ho Ch'ü-ping. The tomb of Han Wu Ti is an unusually large one, measuring 278 yards at its base, and presents opportunities of great archeological interest, as does also that of General Ho Ch'ü-ping, where Mr. Bishop saw not only the well-known stone figure of a horse tramping on a recumbent warrior but examined also several other partially exposed stone sculptures of the early Han period. Photographs and scale plans of several of the tombs and temples in this vicinity were made.

The first actual excavation work conducted by the expedition was begun in the spring of this year at Yü-ho Chên, about 17 miles west of Hsin-yang Chou, in the Province of Honan. This specific undertaking has an added significance archeologically, in that it is the first work of the kind to be conducted in China by any foreign Government in cooperation with the Chinese authorities. At Yü-ho Chên two tombs of the Han dynasty (206 B. C.–A. D. 221) were excavated; the work revealed interesting data on ancient tomb construction, and brought to light Chinese cultural objects dating from prehistoric times to the Han period. Specimens in metal, stone, and pottery were found in the tombs; chariot fittings, mirrors, and arrow points of bronze; one or two gold rings; cast-iron implements; a stone ax, and parts of stone doors and lintels; a jade chisel; slate arrow-heads, and a number of pieces of ancient pottery—some intact, some fragmentary—among them a kind of glazed pottery which, if it be of Han production, is a type hitherto scarcely known to us.

In August the Yü-ho Chên finds were exhibited for one day, under Mr. Bishop's direction, at the Historical Museum in Peking; between 5,000 and 6,000 visitors attended the exhibit.

In the early autumn Mr. Bishop, together with Doctor Barbour, professor of geology at Peking University, and Doctor Tegengren, a Swedish mining geologist, examined a mound at Peitaiho, on the Gulf of Chihli, which dis-

closes evidences of what Mr. Bishop believes to be a Han dynasty naval base or fortress, one of three which are said to have been built at that time, and of which two only have been located.

MARSH-DARIEN EXPEDITION

An expedition under the auspices of Mr. R. O. Marsh explored during a part of 1924 the little-known Isthmus of Darien, in Panama. A number of men representing several institutions and various branches of science accompanied the expedition at the invitation of Mr. Marsh, the Smithsonian Institution being represented by Mr. John L. Baer, who was particularly interested in the anthropological phase of the work. This expedition, like that of Mr. Hoy mentioned in last year's report, had a tragic ending, so far as the Institution was concerned, for while the party was proceeding up the Chucunaque River Mr. Baer was taken suddenly ill, and, although hurriedly transported to the coast, he died within a few days.

A brief report of the work of the expedition, written by the head curator of anthropology of the National Museum, reads in part as follows:

> The route followed was from Balboa to San Miguel Bay, through Darien Harbor, and up the Tuyra River to the village of Real. There a change was made to smaller boats and the Rio Chucunaque ascended to Yavisa, near which a permanent camp was established. A visit was made to the Choco Indians, who occupy the middle river valleys above tidewater, and to the Cuna, who live in the higher river valleys and mountain district. The Choco have a local government, live in large, well-built community houses, and subsist on rice, bananas, plantains, corn, and yucca. They are expert fishermen, diving into deep pools and catching certain kinds of rock fish in their hands. Their religion is a form of primitive belief in the influence of good and bad spirits. Mr. Marsh observes that they are a happy, careless, childlike people, friendly if well treated, very Polynesian-like, wearing breech-cloths, but decorated with beads, silver earrings, and wrist bands, and wreaths of gay flowers.
>
> The Cuna have a higher culture than the Choco, are monogamous, have hereditary chiefs, families have separate houses, and large houses are used for tribal meetings and ceremonies. They raise long-staple tree cotton, dye and weave cotton into cloth and hammocks, grow corn, plantains, bananas, yucca, coffee, chocolate, and sugar cane. They are adepts with the bow and arrow and blowgun.
>
> The party proceeded up the Chucunaque River with great difficulty, owing to barriers of drift logs, at last reaching the Cunas Bravos, who were regarded as hostile. The Cunas Bravos are agriculturists and exhibit a lower degree of culture than the Cunas of the lower river. The chief of the Cunas Bravos spoke good English, having as a young man shipped at Colon on an English vessel, and in 12 years had sailed over half the world. It was at this point that John L. Baer became ill.
>
> Activities were next transferred to the San Blas Indians, who inhabit a long stretch of the north coast of Panama. These Indians, who number approximately 40,000, have always kept aloof from the white man, realizing

that contact with other races would work their undoing. Amicable relations were established with them and many interesting specimens of their arts and industries were collected for the National Museum. The San Blas Indians have an advanced social organization, with a ruler who could perhaps be properly classed as a king. Through the San Blas, Mr. Marsh came in contact with hundreds of "white Indians" whose presence in Panama has been known for a long time but who have not been examined by scientific observers. Individuals brought by Mr. Marsh to the United States have been carefully examined and tentatively stated, before field studies go more fully into the matter, to present a form of albinism.

ADDITIONAL ASSISTANT SECRETARY

For several years there has been recognized the need of an additional assistant secretary to relieve the pressure on the Institution of administration of the eight Government bureaus, several of which have developed rapidly in recent years. This need was laid before Congress, and in the last appropriation bill provision was made for the new position. After a thorough study of the qualifications needed for the position, Dr. Alexander Wetmore was appointed on April 1, 1925, as Assistant Secretary of the Smithsonian Institution, with general supervision of the National Museum, the National Gallery of Art, and the National Zoological Park.

Doctor Wetmore graduated from Kansas State University in 1912, having specialized in biology. He carried on post-graduate studies in biology at George Washington University, receiving the degree of M. S. in 1916 and Ph. D. in 1920. Since 1910 he has served in the Biological Survey, Department of Agriculture, first as agent, then as assistant biologist, and finally as biologist, with official station at Washington, D. C.

During Doctor Wetmore's connection with the Biological Survey he conducted numerous investigations dealing with birds and mammals, and in 1923 directed the U. S. S. *Tanager* expedition which engaged in general scientific exploration of islands in the Pacific.

On November 18, 1924, he was appointed superintendent of the National Zoological Park, where he exhibited unusual administrative ability, and on April 1, 1925, he was installed in his new position.

SMITHSONIAN RADIO TALKS

In my last report there was described the beginning of a series of radio talks by the Smithsonian Institution in cooperation with station WRC of the Radio Corporation of America, as an addition to the Institution's established methods of the diffusion of knowledge. The entire matter was placed in charge of Mr. Austin H. Clark, curator of echinoderms in the National Museum, and under his able and enthusiastic direction the series of talks was a distinct success, as attested by calls and letters from many listeners.

On October 2, 1924, the series of talks was begun again, with increased scope, and between that date and May 14, 1925, twenty-eight 15-minute talks were presented to the radio audience under the auspices of the Smithsonian Institution through station WRC, four of these having been broadcast jointly with stations WJY and WJZ of New York City, thus considerably extending the audience. Ten of these talks were given by members of the staff of the Institution, the other 18 having been given by scientists representing other establishments selected by and presented under the auspices of the Smithsonian. A list of the talks given during the year follows:

SMITHSONIAN RADIO TALKS (1924–1925)

October 2, 1924. Life in the Sea. Mr. Austin H. Clark.

October 16, 1924. Wonders of the Deep Sea. Capt. Frederick B. Bassett, hydrographer of the Navy.

October 22, 1924. Curious Plants. Dr. F. V. Coville.

November 8, 1924. What the Ocean Means to Us. Lieut. Commander George E. Brandt, aid to hydrographer of the Navy.

November 13, 1924. Indian Cliff Dwellings. Dr. J. Walter Fewkes.

November 20, 1924. Living Lamps. Mr. Austin H. Clark.

December 11, 1924. The Ocean Bottom. Dr. George C. Littlehales, hydrographic engineer, Navy Department.

December 25, 1924. What Standards Mean to Us. Dr. Fay C. Brown, assistant director, Bureau of Standards.

December 30, 1924. How Trees Grow. Dr. D. T. McDougall, director, Desert Botanical Laboratory of the Carnegie Institution, Tucson, Ariz.

December 31, 1924. Why the Earth is a Magnet. Prof. W. F. G. Swann, Yale University.

January 3, 1925, Tree Rings and Climate. Dr. A. E. Douglass, University of Arizona.

January 8, 1925. The Sun and the Weather. Dr. C. G. Abbot.

January 22, 1925. The Weather. Prof. W. J. Humphreys, United States Weather Bureau.

January 29, 1925. Mysteries of Bird Migration. Dr. F. C. Lincoln, United States Biological Survey.

February 5, 1925. The Ocean's Food Resources. Mr. Lewis Radcliffe, Deputy Commissioner of Fisheries.

February 12, 1925. What Other Peoples Eat. Mr. Austin H. Clark.

February 19, 1925. What the Earth is Made Of. Dr. Henry S. Washington, Carnegie Institution.

February 26, 1925. Habits of Ants. Dr. William M. Mann, Bureau of Entomology.

March 12, 1925. Fish as Food. Mr. Lewis Radcliffe, Deputy Commissioner of Fisheries.

March 19, 1925. How Some Wasps Live. Mr. S. A. Rohwer, Bureau of Entomology.

March 26, 1925. The Work of the Coast and Geodetic Survey in Saving Life and Property at Sea. Col. E. Lester Jones, Director Coast and Geodetic Survey.

April 2, 1925. Mosquitoes and Other Bloodsucking Flies. Mr. Raymond C. Shannon, Bureau of Entomology.

April 9, 1925. Lizards and Their Kin. Miss Doris M. Cochran.

April 16, 1925. Fighting Plant Diseases by Breeding New Plants. Dr. W. A. Taylor, Chief, Bureau of Plant Industry.

April 23, 1925. Our Fisheries. Hon. Henry O'Malley, Commissioner of Fisheries.

April 30, 1925. The Geodetic Work of the United States Coast and Geodetic Survey. Col. E. Lester Jones, Director Coast and Geodetic Survey.

May 7, 1925. Chiggers, Ticks, and Fleas. Dr. H. E. Ewing, Bureau of Entomology.

May 14, 1925. Butterflies. Mr. Austin H. Clark.

This Smithsonian radio series has proved to be an excellent means of disseminating authentic scientific information, and Mr. Clark had already begun at the close of the fiscal year to arrange the program for the coming year. It is intended to increase not only the scope of the talks, but also the audience to be reached, by exchanging material with Westinghouse station WBZ, of New England.

Plans were under way also, near the close of the year, for a distinct series of radio talks on the National Zoological Park, to be presented by the superintendent of the park and others who have a special knowledge of certain groups of animals shown in the park. It is expected to begin this series in October, 1925.

PUBLICATIONS

A total of 155 volumes and pamphlets were issued during the year by the Institution and the Government bureaus under its administration. Of these, 171,865 copies were distributed, including 262 volumes and separates of the Smithsonian Contributions to Knowledge, 24,008 of the Smithsonian Miscellaneous Collections, 26,825 volumes and separates of the Smithsonian Annual Reports, 6,102 special Smithsonian publications, 104,596 volumes and separates of the various series of National Museum publications, 7,354 publications of the Bureau of American Ethnology, 68 volumes of the annals of the Astrophysical Observatory, 44 reports on the Harriman Alaska expedition, and 1,057 reports of the American Historical Association.

The publications of the Institution constitute its principal means of carrying out one of its main purposes, "the diffusion of knowledge among men." With the 11 distinct series now issued, a very wide field of readers is reached, as in addition to the technical papers, intended for use by scientists and students, a semipopular account of progress in all branches of science is presented to the general reader in the appendixes to the annual reports of the Institution. As explained in last year's report, these reports have since the war been issued over two years late. Last year, however, funds were provided to enable the Institution to bring them up to date

by issuing two reports in one year, and this has now been accomplished, the report for 1923 having been received from the printer in June, 1925, and the 1924 report promised for delivery in October, 1925. This is probably as nearly on time as the reports can be issued, owing to their complicated nature, which involves the assembling of material from foreign as well as American sources and the submitting of proof to some 30 authors in all parts of the world.

Allotments for printing.—The congressional allotments for the printing of the Smithsonian report to Congress and the various publications of the Government bureaus under the administration of the Institution were practically used up at the close of the year. The appropriation for the coming year ending June 30, 1926, totals $90,000, allotted as follows:

Annual Report to the Congress of the Board of Regents of the Smithsonian Institution	$12,500
National Museum	42,500
Bureau of American Ethnology	25,600
National Gallery of Art	1,200
International Exchanges	300
International Catalogue of Scientific Literature	100
National Zoological Park	300
Astrophysical Observatory	500
Annual Report of the American Historical Association	7,000

Committee on printing and publication.—The Smithsonian advisory committee on printing and publication considers and makes recommendations concerning all manuscripts offered for publication. It also assists in determining the publication policy of the Institution and endeavors to insure the most efficient administration of all funds for printing and binding. During the year five meetings were held and 75 manuscripts acted upon. A vacancy was created in the personnel of the committee by the death of Mr. N. Hollister, superintendent of the National Zoological Park. Dr. Alexander Wetmore, who succeeded him as superintendent of the park, also took his place on the committee. Upon Doctor Wetmore's appointment as an assistant secretary of the Institution, he in turn was succeeded on the committee by Dr. William M. Mann, the present superintendent of the park. The membership of the committee is as follows: Dr. Leonhard Stejneger (chairman), Dr. George P. Merrill, Dr. J. Walter Fewkes, Dr. William M. Mann, Dr. Marcus Benjamin, Mr. Stanley Searles, and Mr. W. P. True, secretary.

LIBRARY

During the year the most important change in the staff of the Smithsonian library was the appointment of Mr. William L. Corbin as librarian. Mr. N. P. Scudder, assistant librarian in charge of the National Museum library for the past 38 years, died May 19.

The accessions to the libraries, exclusive of those to the library of the Bureau of American Ethnology, which is reported on by the chief of the bureau, totaled 12,537. The most outstanding gift of the year was the entomological library of the late Col. Thomas L. Casey, numbering about 4,500 volumes and pamphlets, chiefly on coleoptera, which will be deposited in the section of insects of the National Museum.

The loans totaled 10,657. Special effort was made to supply requests for missing volumes or parts of volumes, and 2,009 were obtained. There were sent to the Library of Congress, 7,287 publications to be added to the Smithsonian deposit and 7,408 documents of foreign governments for the document division. Seven thousand one hundred and thirty-two volumes and pamphlets were catalogued and much general work was done on the collections, including a detailed investigation by the librarian of the needs of the library.

NATIONAL MUSEUM

By the action of the Congress in providing for the appointment of an additional assistant secretary of the Smithsonian Institution to have general supervision of the National Museum and certain other Government bureaus under administrative charge of the Institution, Dr. Alexander Wetmore was appointed to that office on April 1, 1925. The application of the reclassification act resulted in the adoption of a more just salary scale for the scientific staff, and for the first time in many years every position in the Museum personnel was filled, the salaries previously available for certain positions having been too small to attract men properly equipped to hold them. The increase of $52,396 in the Museum appropriations over last year was sufficient to cover the larger salaries, but does not allow for proper advancement for efficient service, as provided in the reclassification act. Additional funds are urgently needed for this purpose and also for the normal expansion of the Museum, including the purchase of specimens, and for use in minor explorations.

The Museum contributed during the past winter seven speakers to the series of Smithsonian radio talks, organized last year under the direction of Mr. Austin H. Clark. This new field for the dissemination of knowledge offers great possibilities.

The Loeb collection of chemical types has made splendid progress under the direction of Mr. O. E. Roberts, jr., curator, 616 new specimens having been added to the collection during the year.

The Museum received during the year 363,490 specimens, a slight increase over last year's accessions, and 1,232 additional lots of material were received for examination and report. A total of 23,244 duplicate specimens were distributed as gifts to educational institu-

tions or exchanged for specimens needed to complete collections in the Museum, and 33,966 specimens were distributed as loans to specialists and students for study and identification.

The accessions to the Museum collections in all its departments are described in detail in the report of the assistant secretary, Appendix 1, and only a few of the outstanding gifts will be mentioned here. In the department of anthropology, the ethnological collections were enriched by the addition of a unique series of objects illustrating the material culture of the Indians of eastern Panama, resulting from the Marsh-Darien expedition, and by a collection of California Indian baskets bequeathed by the late Miss Ella F. Hubby, of Pasadena. In physical anthropology, a number of casts of the remains of early man were received, including several of the famous Trinil man of Java, *Pithecanthropus erectus*, from Dr. Eugene Dubois, and also much valuable skeletal material. The department profited especially through explorations conducted by the Bureau of American Ethnology, and by the National Geographic Society under the direction of Mr. Neil M. Judd, which resulted in valuable additions to the collections.

The most notable gift to the department of biology was the collection of coleoptera and mollusks bequeathed to the Museum by the late Col. Thomas Lincoln Casey. The beetles alone in this collection are estimated at 90,000 specimens, representing 16,000 species. A wonderful store of rich material also has been added to the department in the large collections presented by the National Geographic Society as the result of expeditions in China by Dr. J. F. Rock and Mr. F. R. Wulsin, which include 4,500 specimens of vertebrates and 68,000 plants. Additional collections from China have also been received from the Rev. D. C. Graham and Mr. A. de C. Sowerby.

In the department of geology, the paleontological collections have been the chief beneficiaries, having received the results of your secretary's field work for the past four years, as well as collections made by Doctor Bassler, Doctor Resser, and Doctor Ulrich. The other divisions have all received valuable additions, including a number of interesting minerals contributed by Col. W. A. Roebling, and a crystal of the new mineral afwillite, donated by Mr. Alpheus F. Williams. One of the most interesting exhibits is a crystal ball of unusual size and perfection, weighing 110 pounds and measuring 13¼ inches in diameter, shown through the interest of Mr. Worcester R. Warner and the courtesy of the Fukushima Co. (Inc.), New York. This ball is said to be the largest of its kind in the world and has attracted much attention from visitors.

In the division of mechanical and mineral technology there was a slight falling off in the number of accessions received, principally

due to a lack of exhibition and storage space. Interesting additions were made, however, in the transportation section, including one early type of automobile, a Knox car, made in 1901, presented by Mrs. Lansing Van Auken, of Watervliet, N. Y.

The division of textiles, under which are administered also wood technology, organic chemistry, foods, and medicine, received over 8,800 objects during the year, more than twice the number received last year. These included several series of industrial specimens illustrating the manufacture of rubber, sealing wax, and the preparation and dyeing of furs; samples of silk, cotton, and wool fabrics for the textile collections; specimens of woods used in the furniture industry; and, for the public health exhibit models, and posters showing advances in sanitary science.

The exhibits of the division of graphic arts have been greatly improved during the past year by the addition of valuable new material and the rearrangement of the collections. Fourteen special exhibitions of prints in various media, mainly the work of contemporary artists, were held and the two traveling exhibits prepared by the division were widely circulated among the art museums and graphic art organizations of the eastern part of the country.

Among the objects of special interest added to the historical collections were a presentation sword, flags, uniforms, medals, and badges of the late Lieut. Gen. Nelson A. Miles; additional numismatic material, including 800 publications on numismatics transferred from the Treasury Department; and four portraits added to the portrait collection.

The Museum participated in a number of field expeditions, described in the report on the Museum, appended hereto, which have resulted in the addition of much valuable material in all of the departments of the Museum. The auditorium was in frequent demand by scientific and other societies and organizations for meetings and lectures. Visitors to the Natural History Building totaled 557,016; to the Arts and Industries Building, 304,858; to the Aircraft Building, 52,787; and to the Smithsonian Building, 107,342, making in all a total of 1,022,003. This is the first time in the history of the Museum that the year's attendance has exceeded 1,000,000 individuals. Five volumes and 70 separates were published as the result of Museum activities during the year, and 104,596 copies of Museum publications were distributed.

NATIONAL GALLERY OF ART

During the past year additions to the gallery collections were less than in previous years owing to the lack of exhibition space. The art works awaiting approval at the present time do not ex-

ceed $100,000 in estimated value, while, with a suitable art building, it is thought that gifts and bequests to the value of a million dollars or more would be received annually.

Work has been continued by Mr. Platt on the preparation of preliminary plans for the proposed gallery building, made possible by the raising of $10,000 by private subscription as noted in last year's report, and the plans could now be made ready for the beginning of construction within six months. It is estimated that three years would be required to erect the building. The movement for such a building suffered a severe loss in the death of Senator Henry Cabot Lodge, who was deeply interested in the national collections of art and history. In 1924 he offered in the Senate an amendment to the deficiency appropriation bill providing $7,000,000 for a gallery building to accommodate the collections not only of art but also those of American history now housed in the National Museum.

The annual meeting of the National Gallery Commission was held on December 9, 1924. The report of the secretary mentioned the following action on problems considered at last year's meeting: The approval by the Board of Regents of the commission's recommendation to include a division of historical architecture in the National Gallery of Art; the appointment of Mr. Charles A. Platt as architect of the proposed gallery building; and the approval by the commission of the inclusion in the prospective gallery of collections of both American history and art. The question of the acceptance of works of art by correspondence was discussed, and it was resolved that hereafter a majority of the advisory committee be required to examine personally all works of art offered the gallery before making recommendation. Mr. Edmund C. Tarbell was selected to fill the vacancy caused by the resignation of Mr. Edwin H. Blashfield. The annual election resulted in no changes in the officers or personnel of the commission for the coming year. Appreciation was expressed of the activities of the American Federation of Arts and the Federation of Women's Clubs in behalf of the proposed new art building.

Permanent accessions to the gallery during the year included seven paintings, several pieces of sculpture, and a collection of French and other art objects, part of the bequest of the late Rev. Alfred Duane Pell. Several loans were accepted and about an equal number withdrawn during the year, and five paintings belonging to the gallery were lent for exhibition elsewhere. Four special exhibitions were held during the winter and early spring, catalogues for which were issued by the gallery.

FREER GALLERY OF ART

The year's work in the preservation of the collection included the remounting of a considerable number of prints, bringing the total number of objects in the print collection which have been put in final condition to over 1,000. Additions to the collection included a pastel by Whistler, an Indian bronze, Indian paintings, Chinese bronzes, a Chinese painting, and Near Eastern pottery. A list of the Freer Gallery collection of paintings, pastels, drawings, prints, and copper plates by and attributed to American and European artists, together with a list of original Whistleriana, was in press at the close of the year.

Ninety books and periodicals and 127 pamphlets were added to the library. Several hundred photographs and a number of lantern slides were made and sold to persons requesting them. An increased number of requests have reached the gallery for translations of Chinese, Japanese, and Tibetan inscriptions, and for other information bearing on the work of the gallery.

The total attendance for the year was 109,862. Of this number, 431 used the study rooms to view objects not on exhibition or to consult reference works in the library.

The gallery's archeological expedition in China was still in the field at the close of the year, and a condensed report on its work will be submitted later for publication in the Smithsonian annual exploration pamphlet.

BUREAU OF AMERICAN ETHNOLOGY

The function of the Bureau of American Ethnology as defined by Congress is to conduct ethnological researches among the American Indians and the natives of Hawaii, including the excavation and preservation of archeologic remains. The results of these researches are published in technical monographs as well as in articles of a more popular character, and reliable information regarding the American Indian is thus made available for students. The aboriginal Indian culture is rapidly disappearing through contact with the white man's civilization, and when the older men of the tribes who know the rites and customs of their fathers have passed away, much of the ancient lore will be lost forever. The bureau is recording as much as possible of this material before it is too late to secure it.

An important Indian culture area is that of the southeastern United States, and the bureau has recently begun an archeological reconnoissance, so far as its resources will permit, in Florida, Alabama, Tennessee, and Mississippi. It is possible to reconstruct from

historical sources the main outlines of this Gulf culture, but much more information is needed regarding the rituals, idols, ceremonial objects, and symbolism on pottery before we can form a complete idea of this interesting aboriginal culture.

Dr. J. Walter Fewkes, chief of the bureau, spent several weeks in reconnoissance near Florence, Ala., where a number of interesting Indian mounds were located which will be submerged with the completion of the Wilson dam at Muscle Shoals. Mr. Gerard Fowke continued the excavation of two of these mounds, which yielded a considerable collection including rare copper ornaments, among the largest known from the Tennessee Valley. Doctor Fewkes also prepared during the year an illustrated report on a collection of archeological objects from Youngs Canyon, near Flagstaff, Ariz., a region of great importance in determining the relationship of the various culture areas of the Southwest.

During the past year Mr. Earl H. Morris, under the direction of Doctor Fewkes, did necessary repair work on the famous tower of the Mummy Cave House in the Canyon del Muerto, Ariz., which will go far toward preserving what is considered one of the finest examples of aboriginal architecture in the entire Southwest.

Dr. John R. Swanton discovered further material bearing on the social and religious life of the Creek Indians, and embodied this information in papers now being prepared for publication. He also prepared a paper as a result of his recent study of the smaller culture centers within our present Gulf States, entitled "Culture of the Southeast" and a short report on the "Ethnology of the Chickasaw," and he continued work on the now extinct Timucua language.

Dr. Truman Michelson continued his studies of the Fox Indians, transcribing and translating a number of texts relating to their customs and beliefs. He also renewed his researches among the Algonquian tribes of Iowa, spending part of the summer in that State.

During the year Mr. John P. Harrington continued his work on the Burton Mound Indian village situated at Santa Barbara, preparing for publication the material resulting from last year's excavations in cooperation with the Museum of the American Indian, and carrying on additional excavations at the same site which have yielded much important material. In addition, he prepared a report on the archeology of the Santa Barbara region along both historical and archeological lines. Mr. Harrington also made an exhaustive study of the language of the Tulé Indians of Panama, eight of whom were brought to Washington by Mr. R. O. Marsh in October, 1924, and remained until January, 1925, thus giving him an excellent opportunity for this investigation.

In May, 1925, Mr. J. N. B. Hewitt left Washington for Brantford, Canada, to resume his researches among the six nations, or tribes, of the Iroquois. With the aid of the two best Mohawk informants available, Mr. Hewitt made a free English translation of one of the most important of the ancient rituals, and took up the literary interpretation, revision, and textual criticism of previously recorded voluminous Iroquoian texts. An interesting resumé of this work is presented in the report of the chief of the bureau which forms Appendix 4 of this report. Mr. Hewitt also visited the Chippewa of Garden River, Canada, and the Seneca in Missouri and Oklahoma.

During the year, Mr. Francis La Flesche completed his paper on two versions of the child-naming rite of the Osage Tribe. In May Mr. La Flesche visited the Osages and remained through June working at the laborious task of properly recording the gentile personal names used by the full-blood members of the tribe and by some of the mixed bloods. Mr. J. George Wright, of the Osage Agency, cooperated in this work by giving Mr. La Flesche access to the records of his office. Mr. La Flesche collected during his stay in the region some interesting plants used as food or medicine among the Indians.

Miss Frances Densmore continued her special research on the music of the Indians during the past year, resulting in the preparation of five manuscripts comprising transcriptions of 69 songs, together with the original phonograph records and analyses of the songs, which were purchased by the bureau for future publication. Miss Densmore's manuscripts included also one on the uses by the Makah Indians of 26 plants in food, medicine, and dyes. She took advantage of the presence in Washington of the group of Tulé Indians, mentioned before in connection with Mr. Harrington's study of their language, to make a study of their music. Their favorite musical instrument was found to be the "pan pipe" of reeds, and they also used another reed instrument known as the "mouth flute" that had not before been observed in primitive music.

The publications of the bureau issued during the year consisted of two reports and one bulletin. Three other reports were in press at the close of the year. 7,354 copies of the publications of the bureau were distributed during the year.

INTERNATIONAL EXCHANGES

The total number of packages handled by the exchange service during the year was 468,731, weighing 506,164 pounds, an increase in the number of packages over last year of 8,073 and a decrease in weight of 60,943 pounds, due to the smaller size of the packages of publications received for transmission through the service.

Fifty-eight full sets of United States official documents and 40 partial sets are now sent regularly to depositories abroad. This is a reduction of one full set from last year and an addition of two partial sets. At the request of New Zealand, a partial set is now being sent to the General Assembly Library instead of a full one and the Stadtbibliothek of the Free City of Danzig has been added to the list of those receiving partial sets. The immediate exchange of the Official Journal has been entered into during the year with India and the Free City of Danzig.

A committee of experts on the international exchange of publications was called together by the committee on intellectual cooperation of the League of Nations at Geneva, July 17–19, 1924. Mr. H. W. Dorsey, chief clerk of the Institution, represented the Smithsonian on this committee. The committee recommended an additional protocol to the Brussels convention of 1886, enabling the states that are not yet parties to the convention to adhere thereto with reservations. The committee also gave consideration to various other matters looking to the improvement of the international exchange service and the extension of its activities.

NATIONAL ZOOLOGICAL PARK

I regret to have to record the death on November 3, 1924, of Mr. N. Hollister, for eight years the able superintendent of the park. Dr. Alexander Wetmore succeeded Mr. Hollister and served until April 1, 1925. On that date he was appointed an assistant secretary of the Smithsonian Institution, and Dr. William M. Mann, entomologist of the Department of Agriculture and widely known as an explorer in the interests of zoology and entomology, was appointed superintendent of the park on May 13, 1925.

The collection of animals in the park has been somewhat diminished in value during the year by a number of deaths among the older animals. This loss has been offset to a certain extent by the accession of 130 animals presented by various donors and 70 mammals and birds born or hatched in the park, but among the older stock lost were many valuable specimens that can be replaced only by purchase, and funds for this purpose are very limited. The more notable of the new gifts to the park included a splendid young male chimpanzee, from Mr. Victor J. Evans, and a Bateleur eagle, an Abyssinian falcon, and two South American stone plover from Mr. B. H. Swales.

The total number of individuals in the park collection at the close of the year was 1,620, 25 less than reported last year. The species represented, however, show an increase of 17 due to judicious selection and purchase of small species offered for sale at moderate prices.

The attendance for the past year was the highest the National Zoological Park has ever known, the number of visitors recorded reaching a total of 2,518,265.

During the year the animal warehouse, construction of which was begun last year, was completed and put into service, a double bear cage of steel was erected, and many minor repairs were made on old buildings. In many instances these, even when carefully repaired, are poorly adapted to the present needs of the park and should be replaced by new ones that would not only safely and comfortably house their inmates, but would also better accommodate the great throngs of visitors to the collections. The buildings most urgently needed are a house for birds and one for reptiles.

ASTROPHYSICAL OBSERVATORY

Much progress has been made during the year in the study of the sun and its application to weather forecasting. Through the generous assistance of Mr. John A. Roebling, the experimental forecasts by Mr. H. H. Clayton for the city of New York, based on daily telegraphic reports from the observing stations in Chile and Arizona, mentioned in last year's report, were continued. Four papers have been issued in the Smithsonian Miscellaneous Collections, reporting in detail on the results of this work. While it is still largely experimental, the forecasts have certainly indicated a moderate degree of foreknowledge. A higher degree of accuracy in the solar measurements upon which the forecasts are based will undoubtedly lead to better results, and to this end the staff of the observatory is now engaged in completely revising the methods of observing, measuring, and recording the solar radiation. The station at Harqua Hala, Ariz., has been removed to Table Mountain, Calif., to obtain better atmospheric conditions and greater convenience of access. This transfer was made possible through the aid of Mr. Roebling.

The director occupied the Mount Wilson station during the summer and autumn of 1924. He continued work on the three projects outlined in last year's report with the following results: The solar cooker was greatly improved; measurements of atmospheric ozone were made with the Fabry type of apparatus; and new devices were tried in stellar energy spectrum measurements which seem to open the way for great advances in that line.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE

Attention is again called to the urgent need of financial assistance to enable the International Catalogue to resume publication of the 17 annual volumes which for so many years were depended on to

furnish references to the world's literature of science. Ever since war conditions made it necessary to suspend publication in 1921, it has been the hope that foreign political and financial conditions would improve sufficiently to enable the cooperating countries to again furnish the necessary funds through subscription as heretofore, but with the exchange rates of several of these countries now at a lower level than ever before, it seems that this hope will be futile for some time to come.

Although actual publication has ceased for the present, the organization is in no sense bankrupt, for, according to an agreement made at the Brussels Convention in 1922, the regional bureaus continue their work of assembling current bibliographical data, thus keeping the organization working, and when publication is resumed it is believed that new subscribers will purchase the back issues of the catalogue now held in storage. It would be difficult to find an object more worthy of endowment than this unique international, cooperative undertaking, for no similar enterprise has ever filled the place occupied by the catalogue and no new organization could hope to gain the official recognition held by the International Catalogue of Scientific Literature.

NECROLOGY

HENRY CABOT LODGE

Henry Cabot Lodge, United States Senator since 1893 and Regent of the Smithsonian Institution for 22 years, died November 9, 1924. Born in 1850, Mr. Lodge was admitted to the bar in 1876, and during the early part of his career served as editor of the North American Review and later of the International Review. He next served for two years as a member of the Massachusetts House of Representatives, and 1887 was elected to Congress, where he remained until 1893. In this year began his career as a United States Senator, to which office he was continually reelected until the time of his death, and the last term for which he was chosen to represent the people of Massachusetts would not have expired until 1929.

Mr. Lodge was a very influential member of the Senate, having served as Republican floor leader from 1918 until the year of his death. In addition to his political activity, he was the author of many important historical works and essays.

Through his long period of membership on the Board of Regents and his interest and active participation in the affairs of the Institution, Senator Lodge had become a valued adviser, and his loss is keenly felt by the board and the officers of the Institution.

NED HOLLISTER

Ned Hollister, superintendent of the National Zoological Park since October 1, 1916, and one of the foremost mammalogists of the world, died on November 3, 1924.

Mr. Hollister was born at Delavan, Wis., November 26, 1876, where he received his education and began the study of zoology. From 1902 to 1909 he conducted zoological field work for the United States Biological Survey in Texas, New Mexico, Alaska, British Columbia, Washington, Oregon, California, Utah, Nevada, Louisiana, and Arizona. In 1910 he began his connection with the Smithsonian Institution, being appointed assistant curator of mammals in the United States National Museum, which position he held until 1916 when he was selected for the responsible position of superintendent of the National Zoological Park.

In 1911 Mr. Hollister was a member of the Canadian Alpine Club expedition to explore the Mount Robson region of British Columbia and Alberta, and in 1912 he represented the Smithsonian Institution on the Smithsonian-Harvard expedition to the Altai Mountains, Siberia and Mongolia. The results of Mr. Hollister's scientific work have appeared in the publications of the Institution and in various technical journals for many years. Besides over 100 minor papers on zoological subjects, he was the author of a number of large works, including The Birds of Wisconsin (1903); Mammals of the Philippine Islands (1911); Mammals of the Alpine Club Expedition to Mount Robson (1913); East African Mammals in the United States National Museum (vol. 1, 1918; vol. 2, 1919; vol. 3, 1923). This last is probably Mr. Hollister's greatest contribution to science, being a complete technical account of the great collections made in East Africa by Theodore Roosevelt, Paul Rainey, and other collectors.

During Mr. Hollister's term of office as superintendent the National Zoological Park showed a steady growth and development, the collection of animals in the Park being greater in numbers and in scientific value than ever before, and the number of visitors to the park having increased steadily until it reached during the past year a total of over 2,500,000. It was largely through Mr. Hollister's efforts that Congress a few years ago provided funds for the purchase of a frontage of 625 feet at the Connecticut Avenue entrance to the park, thus insuring for the future a dignified and appropriate approach.

Mr. Hollister was a member of many scientific societies and editor of the Journal of Mammalogy.

WASHINGTON I. ADAMS

Washington I. Adams, who was connected with the Institution from 1896 until his retirement in 1924, died at Watertown, Mass., April 19, 1925. Mr. Adams came to the Institution as chief clerk of the International Exchange Service, which position he held until 1905 when he was appointed chief disbursing agent, a position he held until his retirement. Mr. Adams's duties and responsibilities were greatly increased in recent years due largely to the receipt of the Freer bequest of over $3,000,000.

NEWTON P. SCUDDER

Newton P. Scudder, assistant librarian of the National Museum, died on May 19, 1925, two months after his retirement from active service. Mr. Scudder was given an appointment as clerk in 1882 and five years later was made an assistant librarian in the Museum, which position he held until his retirement on March 9, 1925.

Mr. Scudder was born in Brooklyn, N. Y., in 1853, and graduated from Wesleyan University in 1879. His first work was with the Bureau of Fisheries, and under its auspices he made a trip to the halibut banks. As a result of this investigation two papers by him on "The Halibut Fishery, Davis Strait," and "The Salt Halibut Fishery," were published by the Bureau of Fisheries. Following this work, Mr. Scudder came to the Museum library, where he remained until his recent retirement.

Respectfully submitted.

CHARLES D. WALCOTT, *Secretary.*

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APPENDIX 1

REPORT ON THE UNITED STATES NATIONAL MUSEUM

SIR: I have the honor to submit the following report on the condition and operations of the United States National Museum for the fiscal year ended June 30, 1925.

The appropriations for the maintenance of the National Museum for the fiscal year amounted to $584,792, an increase of $52,396 over the previous year. This increase, however, is more apparent than real so far as providing additional funds for the operation of the Museum is concerned, since $44,534 of the amount represented the sum required for increase of salaries from the inauguration of the schedules authorized by the reclassification act of 1923, which became effective July 1, 1924, while subsequent reallocations of employees by the Personnel Classification Board resulted in increasing salary allotments approximately $9,000 beyond the estimated amount. It thus transpired that the amounts available for actual operating expenses were less than during the previous year. Moreover, the reclassification act had the effect of reducing the amount provided for printing and binding since increase in salaries in the Government Printing Office inaugurated under it resulted in increased cost in printing, thus reducing the production value of the sum allotted for that purpose to the Museum.

Attention has been called repeatedly in these annual reports on operation to the great disproportion between the increase in the appropriations provided for the maintenance of the Museum and the increase in the size of its collections, as well as in the quantity, scope, and importance of its exhibition and research work and its service to the public at large. Through the unselfish efforts of the personnel and the practice of the most rigid economy it has been possible until now to maintain a high degree of efficiency, but the very fact of its steady growth will curtail the usefulness of the Museum as a factor in the field of science and education unless it can be assured of sufficient funds to cover its natural and proper expansion. There is urgent need now for additional funds for operation, and for reasonable sums for the purchase of specimens and for use in minor explorations. Rich additions to the collections are received each year through specimens deposited by Government agencies or presented by private donors. Definite gaps in all lines exist, however, that may be filled only by purchase of desirable

things or by small sums spent in field work to acquire them. Specimens actually needed are obtainable usually only at long intervals and if such opportunities are allowed to pass further chance to acquire them may be remote or uncertain. Highly desirable things offered at reasonable prices are refused nearly every week. The Institution should have available moderate funds that might be used for such purposes.

Need of funds for exploration is also imperative since through this means only is it practicable to obtain data and information of importance in connection with many objects desired for the collections. Definite research on the part of experts is often required to clear up doubtful points in source or relationship of many things.

More and more each year the National Museum is approached for authentic information in a wide range of subjects not to be obtained elsewhere. Its vast collections of carefully arranged and classified specimens afford a full record of industrial, social, and esthetic progress as well as of painstaking and exhaustive research work in the natural sciences. In it are gathered the results of governmental activities and private donations aggregating many millions of dollars. The Museum collections serve as a foundation for the economic work of such great Government organizations as the Department of Agriculture, the Geological Survey, and others, and the members of the scientific staff assist materially in the work of these institutions through identification and report on the various objects with which they are concerned. To maintain its position of constantly increasing importance in the field of Government service and to fulfill its function as a truly national museum, it is absolutely necessary that adequate funds be provided for its proper maintenance. It is sincerely hoped that its needs in this direction will be recognized and provided for by suitable appropriations.

Final establishment of the salary schedules under the reclassification act brought the salaries paid to members of the scientific staff in the National Museum in most cases to a parity with those doing similar work in other departments, and has thus in large part corrected a lamentable condition in which members of the staff were paid at rates established many years ago and which in modern circumstances had become wholly inadequate. The increased salaries available have allowed the filling of several vacancies that have existed for some time and to fill which there were no suitable candidates at previous rates of pay. Adjustments in allocation in certain positions still remain to be made before the scale in force is just and equitable in all its features, as it is felt that the rates assigned in some positions do not correspond with the grades or emoluments applied to similar positions in other branches of Government service.

The financial assistance accorded to members of the scientific staff has been greatly appreciated but attention is drawn to the necessity of keeping this matter in mind so that faithful service may be further rewarded. Provision is made in the reclassification act for increase in salary to the average amount in the various grades, provided a suitable record of efficiency is maintained. Two surveys of efficiency of the entire staff have been made in accordance with regulations laid down by the Personnel Classification Board, and in further accordance with the regulations of that board the ratings assigned have been transmitted to the staff. It is highly gratifying to record that with very few exceptions these ratings have been excellent and have been of such a degree that they warrant promotion. Under existing appropriations funds for the proper advancement indicated are not available. The matter is earnestly recommended for serious consideration to the end that money may be provided to make the necessary increase. Such action has been taken in other departments and it is sincerely desired to avoid falling behind in this respect as was the case under former salary regulations.

Though not universally recognized as an element in educational activities, the National Museum fulfills a threefold function in that field. Through the care and preservation of its vast and inestimably valuable collections and their careful arrangement and classification, it affords a visual record of progress and development of our own and foreign peoples, of important advances in the history of our country, and of achievements in science, industry, and art. As a museum of research it affords opportunity to the trained specialist and to the serious student to pursue studies of all kinds with facilities not elsewhere obtainable. It is seen as a museum of education by the visiting public, who come to examine the many treasures in the exhibition halls, while through its publications, correspondence, and distribution of duplicate specimens it reaches thousands who are not so fortunate as to be able to visit its halls. It may be safely said that no textbook, work of reference, or encyclopedia of facts has been issued in this country in recent years that has not based some of its statements on information originating in the National Museum.

As a modern feature for the dissemination of knowledge may be mentioned the radio program of the Smithsonian Institution organized last year which has continued under the direction of Mr. Austin H. Clark of the Museum staff in cooperation with the broadcasting station WRC, Radio Corporation of America. In all, 28 talks, of 15 minutes each, were given during the winter, 10 being by members of the staff of the Institution, including 7 from the Museum. Four of these talks were broadcast also by stations WJY and WJZ in New York City, reaching thus a broad audience. The talks, which began October 2, 1924, and were concluded on May 14, 1925, were

delivered by 25 individual speakers. The subjects chosen came from a wide range in the field of science and proved highly popular as attested by the many letters received from listeners far and near. Some of them have been published in permanent form. Possibilities in the spread of authentic scientific information through this means are great, since in this way informational talks prepared in an interesting manner go out to an extended audience fully appreciative of what they hear. It is possible thus to present the newer facts and changing aspects of science in a manner unequaled by other means.

As was anticipated when the Loeb collection of chemical types was placed under the special charge of a paid curator, splendid progress has been made. Through the activities of Mr. O. E. Roberts, jr., the curator, and cooperation on the part of many chemists and organizations, 616 new specimens have been added to the collection during the year. The importance of such a collection is only just beginning to be realized, but the interest already taken in it by specialists in chemical research work is indicative of the important results eventually to be achieved.

COLLECTIONS

The results of the year show a most satisfactory growth in the collections, the total number of specimens received amounting to 363,490, while additional lots of material received for examination and report numbered 1,232. The number of additions exceeds slightly the very high mark attained last year, while material for report also shows a slight increase. The increases are highly gratifying and have brought a great amount of extremely valuable material to the collections.

As in previous years, duplicate specimens were distributed as gifts to educational institutions or utilized in the making of exchanges for specimens needed toward completing the collections. The material thus disposed of amounted to 23,244 specimens, of which 2,099 represent gifts. An additional lot of material, comprising 33,966 specimens, was distributed in the form of loans to specialists and students for study and identification.

The following resumé of the more important accessions received during the year is submitted by the heads of the several departments or divisions of the Museum:

Anthropology.—The department of anthropology reports a year of satisfactory progress in all lines of its activities.

In the division of ethnology there was received a unique series of objects illustrating the material culture of the Indians of eastern Panama as a result of the explorations of the Marsh-Darien expedition cooperating with the Smithsonian Institution. This collection

is regarded of such scientific interest that a special paper describing it has been prepared and submitted for publication. Another accession of particular beauty and rarity was the remainder of the collection of California Indian baskets bequeathed by the late Miss Ella F. Hubby, of Pasadena.

Among additions in American archeology may be mentioned collections from Town Creek, Ala., on the site of Wilson Dam, Muscle Shoals, and from Weeden Island, St. Petersburg, Fla., collected by Gerard Fowke and Dr. J. Walter Fewkes, respectively, and transferred from the Bureau of American Ethnology. The first of these is especially valuable, since it comes from a locality that will be covered by water when impounded by the dam.

The accessions in the division of Old World archeology include a copy of the Welsh version of the Bible from David W. Evans and numerous Egyptian and Graeco-Roman antiquities and ancient glassware loaned by Edward Sampson.

In physical anthropology there were added several casts of the remains of the famous Trinil man of Java, *Pithecanthropus erectus*, received from Dr. Eugene Dubois, who has been engaged in exhaustive studies of this highly important fossil. Also there has been received from the British Museum a cast of the skull found recently at Broken Hill in Rhodesia. Other important casts represent remains of ancient man from Czechoslovakia. These will all be of great assistance in studies of ancient man. The Bureau of American Ethnology transferred skeletal material from Florida, and the National Geographic Society presented important skeletons found in excavations at Pueblo Bonito and Pueblo del Arroyo, New Mexico. The Buffalo Society of Natural Sciences donated a collection of Iroquois skeletal material collected in Erie County, N. Y.

Mr. Hugo Worch has added to the Worch collection of pianos four splendidly decorated harpsichords of the sixteen and seventeen centuries. Miss Frances Densmore completed her study of the collection of musical instruments and submitted a manuscript descriptive of it.

The ceramic collection was augmented by a collection of English porcelain and glass, gift of Mrs. Frances Roome Powers.

In art textiles, the valuable laces of the late Mrs. H. K. Porter were continued as a loan by her daughter, Miss Hegeman. By bequest of the late Miss Emily Tuckerman, all specimens belonging to her on deposit in the Museum were made a gift. The Misses Long contributed several fine specimens of embroidery and lace.

The department profited especially through explorations by the Bureau of American Ethnology, the National Geographic Society, and the Marsh-Darien expedition. Neil M. Judd, in charge of

the excavations carried on under auspices of the National Geographic Society at Pueblo Bonito, remained in the field for several months and secured excellent collections and highly important information. Henry B. Collins, jr., conducted explorations at ancient village sites in Mississippi, where valuable studies have resulted from intensive work in the field.

Biology.—Increase in the collections in the various divisions of this department have equaled and in some cases have excelled those recorded for the previous year. Of outstanding interest is the collection of coleoptera and mollusks that came to the Museum by bequest of the late Col. Thomas Lincoln Casey. The beetles alone in this collection are estimated at approximately 90,000 specimens representing 16,000 species of which 5,000 were described by Colonel Casey and are represented by the types.

The large collections presented by the National Geographic Society as the result of expeditions in China by Dr. J. F. Rock and Mr. F. R. Wulsin include a total of over 4,500 specimens of vertebrates and 68,000 plants, a wonderful store of rich material that has added greatly to the representation from that area, for, in addition to a number of forms previously unknown to science, there are in the collection many species not before represented in this institution. Additional collections from China have come through the continued efforts of Rev. D. C. Graham in western Szechwan, which have added vertebrates and valuable insects. China has been further represented in our accessions by material collected by A. deC. Sowerby, presented through the continued interest of Col. R. S. Clark.

Mr. B. H. Swales has continued his important additions to the collections of birds by the purchase of a considerable number of species not previously represented including a number of rarities from Madagascar. Further acquisitions through the interest of Dr. Casey A. Wood have resulted in additional specimens from Fiji. Dr. Hugh M. Smith, now in Siam, has begun presentation of valuable material from a region almost unknown in our collections and has included among other things in his first sending a highly valuable lot of marine invertebrates.

Valuable collections of fishes have come from the H. K. Mulford Co., of Philadelphia. Certain important specimens have been purchased for the collections of mollusks from the income provided for that purpose by the Frances Lea Chamberlain fund.

In the exhibition halls there was installed a new group of Rocky Mountain goats prepared from material collected by Secretary and Mrs. C. D. Walcott; the case represents a family of four with an appropriate background of rockwork. A number of older mounts of other mammals have been replaced by material prepared by

modern methods and additions have been made to the collections exhibiting the local fauna. A second group not quite completed is that of the dik-dik, a diminutive antelope from Africa.

Geology.—Although a decrease is shown in the number of accessions and amount of material received in this department as compared with 1923–24, reference to earlier reports shows the present year to be an average one, with a total of 198 accessions, aggregating 79,674 specimens.

The paleontological collections are again the chief beneficiaries, notable among the acquisitions being the results of Secretary Walcott's field work for the past four years, as well as collections made by Doctors Bassler, Resser, and Ulrich in the summer of 1924. Gifts also materially increased the collections of invertebrate fossils, particularly those of the Mesozoic and Cenozoic periods, and one bequest added many thousands of specimens, including types.

In vertebrate paleontology the most important acquisition is a series of footprints from Permian deposits secured by Mr. C. W. Gilmore from the Hermit Trail, Grand Canyon National Park, working under the auspices of the National Park Service. Dr. J. C. Merriam, of the Carnegie Institution, of Washington, who was instrumental in perfecting the arrangements under which this material was secured, supplemented it by additional specimens taken personally. The fossil cetacean collection has also been materially increased and is now thought to be probably the largest and best preserved assemblage of these forms in any American institution.

A series of unusual forms of stalactites and stalagmites from Carlsbad Caverns, New Mexico, presented by the National Geographic Society, permitted the installation of an important addition to the exhibits showing cave phenomena.

In the field of applied geology the most important material received was that obtained by Assistant Curator Foshag while working with a United States Geological Survey field party in New Mexico. Doctor Foshag also collected much mineralogical material needed for the study collections. A few striking exhibition specimens of ores were obtained from various sources.

Col. W. A. Roebling was the chief contributor to the mineral collections, 6 accessions comprising 51 specimens being credited to him during the year. The most notable of these is a group of axinite crystals thought to be the largest of this mineral yet found.

A crystal of the new mineral afwillite, donated by Mr. Alpheus F. Williams, is of particular interest in being one of the type lot which consists of less than a pound of the material. Notable specimens for exhibition were furnished through Mr. F. L. Hess, of which a group of large wulfenite crystals from Mexico, and a mass of pink muscovite and amblygonite from New Mexico are prominent.

Through the interest of Mr. Worcester R. Warner and the courtesy of the Fukushima Co. (Inc.), New York, the department of geology has been privileged to exhibit a crystal ball of unusual size and perfection, weighing 110 pounds and measuring 13¼ inches in diameter, which is said to be the largest of its kind known. This has attracted much attention from visitors.

Exchanges have added materially to the collections in all divisions of the department, both for exhibition and study, and a few objects have been acquired by purchase. Several additions have been made to the meteorite collection, consisting chiefly of fragments of moderate size, which, while important from a scientific standpoint, add little to the exhibits. A number of gems have been added to the Isaac Lea collection through the Frances Lea Chamberlain fund.

Secretary Walcott continued his researches in British Columbia; Dr. R. S. Bassler in Tennessee, in cooperation with the geological survey of that State; Dr. C. E. Resser in the Rocky Mountain region of the United States; and Dr. W. F. Foshag was detailed to accompany a geological survey party in New Mexico. Mr. C. W. Gilmore spent some weeks in the Grand Canyon National Park, under the auspices of the National Park Service.

Work on the exhibits has been chiefly confined to cleaning and rearranging, no important changes having been made. In stratigraphic paleontology much time and effort have been consumed in expansion of the collections and in general cleaning and rearranging of the paleobotanical collections. The efforts of the force in vertebrate paleontology have been confined almost wholly to the preparation of the huge dinosaur skeleton, collected last year, with satisfactory results.

Research work has continued to the extent permitted by other duties.

Arts and industries.—Growth in this department has been satisfactory in the main though hampered in many lines by crowding. Materials for accession are selected with great care, but so much that is wholly desirable is offered that available facilities for exhibition are greatly overtaxed.

In the division of mechanical and mineral technology there was a slight falling off in the number of accessions received and a material decrease in the number of specimens catalogued during the year, due, primarily, to a lack of exhibition and storage space. This condition is aggravated more and more each year and will lead to further decrease in the rate of acceptance of objects for the collection since now choice may be made only of things urgently required.

In the transportation section one early type of automobile was received, a Knox car made in 1901, presented by Mrs. Lansing Van

Auken, Watervliet, N. Y. The signal section of the American Railway Association added to its series of specimens showing developments in railway signaling 16 objects that indicate some of the early efforts in block signaling. The Buda Co., of Harvey, Ill., presented a full-size gasoline automobile engine operated by an electric motor specially arranged for exhibition, as by pressing a button it may be put in operation, thus permitting study of many of the working parts in action. Mr. Henry Ford presented a specially prepared exhibit of the planetary transmission used in the Ford automobile. As this is one of the distinctive types of automobile transmissions it will form an interesting part of an exhibit now under way designed to illustrate the various fundamental units composing the automobile.

The Portland Cement Association, of Chicago, Ill., through its local office, presented a full-size photographic copy, suitably framed, of the original patent on Portland cement granted by King George III to Joseph Aspdin in 1824. The presentation of this interesting paper was made in the presence of about 12 officials representing various departments of the Government interested in Portland cement and was accepted on behalf of the Museum by Secretary Walcott. The framed copy now hangs in close proximity to the exhibit on Portland cement in the division of mineral technology.

The collections under the supervision of the curator of textiles, which, besides textiles, embrace wood technology, foods, animal products, organic chemistry, and medicine, were increased by many gifts and by transfer of material from other Government bureaus, amounting in all to over 8,800 objects. A statement concerning the most important of these follows:

Series of industrial specimens illustrating many branches of rubber manufacture, the manufacture of sealing wax, and a model showing the preparation and dyeing of furs were added to the collections from the field of industrial chemistry. The textile collections were increased by gifts of fibers, yarns, silk and cotton dress and drapery fabrics, wool fabrics, mohair plushes, and machine embroideries; also many examples of modern handicraft. To the collections arranged to show the importance of wood and the industries based thereon were added veneered panels of woods used in the furniture industry, showing the different kinds of finishes used, a series of specimens demonstrating the manufacture of lead pencils, and a large timber of Douglas fir to represent an important product of the forests of the Pacific Northwest. The collections added to the division of medicine were chiefly in the field of public health, and consisted of models and posters showing advances in sanitary science. Specimens of materia medica and numerous objects asso-

ciated with the history of medicine in America were among other additions to this division.

Work of the division of graphic arts continued mainly along lines developed in past years, and consisted of improving and completing existing series of specimens and the continuance of special exhibitions. Fourteen of the latter held during the year attracted favorable attention. Valuable additions to exhibit materials have been received or promised as a result of these exhibits.

One important new exhibit of microengraving has attracted much attention. It consists of "The Lord's Prayer" engraved on glass in a square space about $\frac{1}{135\,00}$ of an inch on a side, so arranged that it is viewed under a microscope through the eye of a needle. The entire exhibit was prepared and presented by Alfred McEwen, of New York City.

The exhibit of mezzotints has been completely rearranged, with additions of new specimens to the historical series and of two series of plates and prints to the technical set, so that it now presents a clear idea of the early and modern methods of engraving mezzotints.

The collection illustrating methods used in printing for the blind has also been greatly improved by the incorporation of additional material which gives a clear idea of the method of making and printing the special plates required in this work and the manner in which the characters are read by the blind.

Three Babylonian tablets about 4,000 years old, inscribed with cuneiform writing, acquired by purchase, have been placed with the exhibits on the history of writing where they make an interesting addition. Two of these of small size are of baked clay and represent a skillful form of writing. The other represents the effort of a schoolboy learning to write, and, while crude, is of considerable interest. Tablets of this latter kind are very rare, as they are of unbaked clay and were not intended to be permanently preserved.

From Mr. B. M. Comerford, of Washington, D. C., were received four examples of the rare and beautiful art of fore-edge decorating, which consists of painting on the small portions of the leaves of a book that are exposed when the back is pushed out of normal position. The picture disappears when the book is closed. This art is said to have been originated by Samuel Mearne, who is reported to have practiced it as early as 1662.

The aquatone process, which was mentioned in last year's report as a new and beautiful development among modern photomechanical processes, is now represented by an exhibit indicating the technical steps in the process of preparing and printing such a plate. This is the gift of William Edwin Rudge, of New York, and shows well the simplicity of the process and the beauty of the results obtained.

The two traveling exhibits prepared by the division have been out almost continuously, and have been shown by various art museums and graphic art organizations in the eastern half of the country, including those in Milwaukee, Wis., Brooklyn, N. Y., and Houston, Tex., as well as many intermediate points. Four other smaller exhibits are being prepared, which likewise depict the technical side of graphic arts but on a smaller scale. These consist of 25 mats, measuring 14 by 17 inches, weighing approximately 30 pounds, that can be shipped by mail at very small expense. The larger exhibits, which weigh 320 and 430 pounds, respectively, are forwarded by express.

The collection of photographs in the section of photography is becoming one of the most important public collections in the country, due to the efforts of A. J. Olmsted, custodian, and Mr. Floyd Vail, of New York City.

History.—The additions to the historical collections surpass both in number and scientific importance those received during the previous year. The military collections have been increased by the addition of a number of objects of special interest, among which are a presentation sword, flags, uniforms and accessories, and medals and badges owned by Lieut. Gen. Nelson A. Miles. The sword was presented to General Miles in 1887 by citizens of the State of Arizona in recognition of his services in connection with the capture of the Indian chief, Geronimo, and his band of hostile Apaches. The medals and badges include the Congressional Medal of Honor and the badge of the Society of the Cincinnati. An object of special interest in this connection is a large heart-shaped shield of silver and bronze which was presented to General Miles by the officers of the Fifth United States Infantry. These objects have been received by the Museum from Mrs. Samuel Reber and Maj. Sherman Miles, United States Army. A number of presentation and service swords owned during the nineteenth century by Maj. Gen. Frank Wheaton, United States Army, have been presented to the Museum by Mrs. Frank Wheaton. From Gen. John J. Pershing was received a number of military flags, maps, and posters, and the office desk and accessories which he used at the headquarters of the American Expeditionary Forces at Chaumont, France, during the World War.

The naval collections have been increased by the addition of a sword and two uniform coats owned during the early part of the nineteenth century by Commodore Samuel Woodhouse, United States Navy, which have been presented by Dr. Samuel W. Woodhouse, jr., and also by the transfer from the Navy Department of a series of 17 models illustrating the development of the United States Navy during the period from 1776 to 1920.

Through the cooperation of the United States Treasury Department, a number of valuable United States and foreign coins and medals have been added to the numismatic collections. Of special interest in this connection has been the transfer from the Treasury Department to the Museum of about 800 publications, forming a highly useful library, on the subject of numismatics.

The portrait collection was increased by the following additions: A portrait of Elizabeth Cady Stanton by Anna E. Klumpke was presented by the National American Woman's Suffrage Association; portraits of Gen. John J. Pershing and Marshal Ferdinand Foch were presented by the artist, Victor Perard. A portrait of President Warren G. Harding, by John Innes, showing the former delivering an address at Stanley Park, British Columbia, July 29, 1923, was presented to the Museum by the National Press Club, Washington, D. C.

EXPLORATIONS AND FIELD WORK

The greater part of the material added to the collections during the current year was as usual derived from expeditions and explorations under the auspices of private organizations and Government agencies.

In biology the National Geographic Society was a large contributor through its expeditions in China, in the Arctic, and in this country. From the former extremely valuable and extensive collections, comprising some 68,000 plants, over 1,600 birds, 60 mammals, and other specimens, were received from the society's expedition under Dr. Joseph F. Rock, principally from the Province of Yunnan. The bulk of the material collected by the society's expedition under Mr. F. R. Wulsin, which has been referred to in previous reports, was received during the past fiscal year. It comprised important and extensive collections of birds, mammals, reptiles, and fishes from inner Mongolia, the Alashan Desert, and Western Kansu, in the region of Lake Kokonor, northeastern Tibet, as well as from the Min Sha Range, which marks the boundary between the Provinces of Kansu and Szechwan. The specimens from this source are of particular importance, since they afford topotypes of numerous species described from Przevalski's famous exploring trip of 50 years before. They also include important ethnological material from a region not heretofore represented in this institution. The collections from these sources supplement those made by Mr. R. S. Clark and Mr. Arthur deC. Sowerby in 1908–9 in Kansu, Thansi, and Shensi, and the important collections made during the past year by Rev. David C. Graham in Szechwan. The latter were secured on a difficult trip to Songpan and the Yellow Dragon Gorge,

and comprise many specimens new to the Museum. Incidental to the Arctic explorations undertaken for the National Geographic Society in Bering Sea and Arctic America during the summer of 1924 by Capt. R. A. Bartlett, and by Mr. D. B. Macmillan in the *Bowdoin* in Greenland in 1924, some interesting zoological material was secured and presented to the Museum. In August, 1924, Mr. Paul C. Standley was detailed as a member of the Carlsbad Cavern expedition of the National Geographic Society, his association in the enterprise resulting in a collection of some 500 specimens of plants, many of species not previously known from New Mexico. A popular account of the vegetation of the Carlsbad Cavern region has been prepared for publication largely on the basis of this field work. Under the auspices of Mr. Robert S. Clark, several eastern Provinces in China were visited by Mr. Arthur deC. Sowerby, from whom extensive collections were received. Dr. Hugh M. Smith, who is at present fisheries adviser to the Siamese Government, forwarded interesting zoological material from that country.

As a result of his visit to Haiti during the spring of 1925, Mr. Gerrit S. Miller, jr., of the Museum staff, secured a collection of the extinct vertebrate cave fauna as well as miscellaneous specimens of the living mammals, birds, reptiles, insects, and plants of the island. Doctor Bartsch continued his experiments with Cerions, through the assistance of the Carnegie Institution of Washington, his visit to the experimental colonies of these mollusks planted on the Florida Keys resulting in the addition of some 2,700 specimens to the collections. In addition, through the cooperation of the United States Coast Guard, he was able, with the assistance of Mr. W. B. Marshall of the Museum staff, to do some dredging in the inner leads of Cape May and in the shallow waters off the coast of New Jersey, which resulted in adding quite a number of specimens from a region little explored. A survey of the fisheries of the Republic of Salvador, undertaken by S. F. Hildebrand and F. J. Foster, of the United States Bureau of Fisheries, at the request and at the expense of the Salvadorean Government, resulted in the collection and subsequent transfer to the Museum of a large collection of fishes and some crustaceans from the region referred to. Secretary Walcott's field work in the Canadian Rockies, in addition to yielding important paleontological material, added a number of valuable zoological specimens, some of which have been utilized in preparing a new exhibition group of Rocky Mountain goats in the Mammal Hall of the Museum. As the result of the detail by the Department of Agriculture of Mrs. Agnes Chase, of the Bureau of Plant Industry, to field work in the eastern highlands of Brazil, important botanical material was received for the National Herbarium.

Dr. William Schaus, honorary assistant curator of insects, through personal efforts raised the sum of $50,000 for the purchase of the famous collection of Lepidoptera gathered by M. Paul Dognin, Wimile, France, comprising a series of specimens highly valuable for studies of these important insects. Doctor Schaus went to France to supervise the packing of this collection for shipment to the museum, where it has been received, although not in time to be included in more detail in this report.

The material secured by the Marsh-Darien expedition to Panama, referred to in last year's report, was received during the past year. It contained so much interesting ethnological material of a class not previously represented in our collections that it has been made the basis of a special report prepared by Mr. H. W. Krieger, curator of ethnology. Mr. Neil M. Judd, curator of American archeology in charge of the Pueblo Bonito expedition of the National Geographic Society, secured important collections for the Museum, and equally important material was secured by Mr. Gerard Fowke under the auspices of the Bureau of American Ethnology from burial sites near Muscle Shoals, Ala., which will soon be covered by water impounded by the Wilson Dam. Doctor Fewkes, Chief of the Bureau of American Ethnology, assisted by Mr. M. W. Stirling, of the department of anthropology, conducted an exploration of ancient Indian mounds at St. Petersburg, Fla., which resulted in important finds and material valuable to the collections. Dr. Aleš Hrdlička, of the Museum staff, assisted by a generous grant from the Buffalo Society of Natural Sciences, left in March for an extended trip through the Far East, Australia, and South Africa for the purpose of observing at first hand a number of peculiar races of men and to collect data on various discoveries of ancient man.

Under the auspices of the United States Geological Survey, Dr. W. F. Foshag, of the Museum staff, was enabled to make collections and to visit mineral properties in western Nevada where acquaintances made with mine owners and collectors will inure greatly to the benefit of the Museum. He also collected a series of minerals from California. Short trips to various localities in Maryland were made by Mr. Earl V. Shannon, of the Department of Geology, in cooperation with the State geological survey, and to Connecticut through an arrangement with the geological and natural history survey of that State, which resulted in necessary additions to our collections. Aided by grants from the O. C. Marsh and Joseph Henry endowment funds of the National Academy of Sciences, Secretary Walcott continued his field work in western Alberta for the purpose of completing his reconnaissance of the pre-Devonian

formations north of Bow Valley, the main objects of this year's work being to determine the correct geologic horizon of the Lyell limestone. Many attempts to do this during the past six years resulted in failure, and it really seemed that these great limestone beds were barren of fossils. In measuring geologic sections in the Tilted Mountain Area, however, interbedded bluish-gray layers containing fragments of Upper Cambrian trilobites were at last found, which proved their correct geologic horizon.

Dr. Charles E. Resser continued his field explorations of the Cambrian and associated formations. Dr. R. S. Bassler, in cooperation with the geological survey of Tennessee, continued his work in that State, and at the same time made collections of Mississippian fossils for the Museum. Mr. Erwin R. Pohl was detailed for a short time to make collections from the celebrated Rysedorph conglomerate of northern New York, which resulted in a good series of fossils for the Museum.

In cooperation with the National Park Service, Mr. C. W. Gilmore, curator of vertebrate paleontology, visited the Grand Canyon National Park, Ariz., for the purpose of accompanying the Doheny scientific expedition as an observer to investigate and make collections of fossil tracks exposed in the Coconino sandstone and to prepare an exhibit of the tracks in situ by the side of the Hermit Trail leading into the Grand Canyon. His trip was a most successful one in all of its aspects, a series of slabs some 2,000 pounds in weight and containing a splendid series of the fossil footprints being collected and shipped to the Museum. Dr. J. W. Gidley, of the geological staff of the Museum, visited the region around Melbourne, Fla., on two occasions during the year and secured an interesting collection of fossils. He also visited Adele, Iowa, for the purpose of studying the geology of a formation in which had been found certain human artifacts. Continuing the practice of previous years, Mr. Norman Boss made several short trips to the Calvert Cliffs along Chesapeake Bay in search of Miocene fossils.

A movement which promises important results to the Museum was inaugurated in the summer of 1924, when the Secretary of the Navy invited the Smithsonian Institution to participate in a conference of representatives of the executive departments and scientific establishments of the Government of the United States for the purpose of formulating plans for a naval expedition to undertake investigations in oceanography. Mr. Austin Clark, Dr. Waldo L. Schmitt, and Dr. Paul Bartsch, of the Museum staff, were designated as representatives of the Institution on this occasion, and at the close of the meeting Mr. Clark was chosen as representative of the Smithsonian Institution and its branches on an executive interim committee.

BUILDINGS AND EQUIPMENT

The various buildings of the Museum have been kept in good condition throughout the year through minor repairs, which have consisted largely in painting walls, ceilings, and floors, repairing cracks in plaster and cement surfaces, painting tin gutters and roofs, and work of a similar character. In the Arts and Industries Building new floors were laid in a few of the rooms and the ventilation improved.

In the Smithsonian Building it was necessary to replace with beaded sheets the entire plaster ceiling of the main hall on the third floor, occupied by the Museum's division of plants. The work was done partly by contract and partly by the Museum force.

Under a special appropriation for the purpose, four modern fire hydrants were installed under the direction of the District Commissioners in the Smithsonian Park.

The cost of heating for the year was considerably less than during the previous year, due partly to the lower cost of coal and partly to the fact that for the first time in many years it was possible to secure coal from the New River fields, which is better adapted to the heating apparatus. During the year, 3,292 tons of bituminous and 15.5 tons of anthracite coal were used. The total electric current generated during the year was 476,709 kilowatt-hours, at a total cost of 2.362 cents per kilowatt-hour, including labor, material, interest, and depreciation on the plant.

A total of 346.3 tons of ice were produced during the year at a cost of $2.309 per ton. A new compressor has been purchased which, with increase in the size of the condenser made during the year, will increase the capacity of the ice machine from 2 to 2½ tons per day. Even with the cost of the new compressor included, the cost per ton of ice will be under the wholesale price paid for ice by the Government.

During the year 18 exhibition cases and bases and 127 pieces of storage, laboratory, office, and other furniture were acquired by purchase and construction. Of the storage cases 11 were purchased and 116 built in the Museum shops.

MEETINGS AND RECEPTIONS

The Department of Agriculture was granted the use of the auditorium on October 27, 28 and 31 for a series of lectures by Dr. Vernon H. Blackman, of the Imperial College of Science and Technology in London, and on January 26 for a lecture on Agricultural Research and the Community, by Sir Daniel Hall, scientific adviser

to the Minister of Agriculture in England, all lectures being open to department workers and others. Other bureaus of this department using the auditorium were the Forest Service for a series of five lectures extending from October to June, the Bureau of Agricultural Economics for an exhibition and talk on the evening of April 20 by Mr. L. M. Estabrook, and the Federal Horticultural Board on June 29 and 30, for public hearings on fruit and rose stocks and the white-pine blister rust (when room 43 was also used), and again on September 20 by the same board for a conference on the white-pine blister rust quarantine. The auditorium and all committee rooms available were used for a national conference on utilization of forest products called by Secretary Wallace on November 19 and 20. On the afternoon of May 22, the department's post, Veterans of Foreign Wars of the United States, held memorial services in the auditorium in honor of the late Henry C. Wallace, and of the men of the Department of Agriculture who lost their lives in the World War.

The Department of Commerce occupied the auditorium for the National Radio Conference on October 7 and 8.

Dr. Aleš Hrdlička, of the Museum staff, gave two courses of lectures on anthropology during the period from October 24 to December 19—Man's Origin, on Friday afternoons in the auditorium, and Man's Physical and Physiological Characteristics, on Monday afternoons in room 43. These proved highly popular and were well attended.

Under the auspices of the School of Foreign Service, a series of 12 lectures were given in the auditorium by Dr. Edmund A. Walsh, S. J., of Georgetown University, on Russia in Revolution. These extended over a period from February 13 to May 15 and attracted much attention.

Associations and societies using the auditorium and room 43 for their annual meetings were the American Association for the Advancement of Science, December 29 to January 3, and the American Society of Mammalogists, April 8 to 10. The American Surgical Association met in the auditorium May 4, 5, and 6, and on the same dates the eighth annual meeting of the American Association for Thoracic Surgery was held in room 43. On the evening of January 2 the division of insects of the Museum was thrown open to members of the Entomological Society of America and the Association of Economic Entomologists, who were in attendance at the meeting of the American Association for the Advancement of Science.

In addition to the foregoing the auditorium was used on various occasions by the Wild Flower Preservation Society, the Audubon Society of the District of Columbia, the District of Columbia Dental

Society, Washington Society of Engineers, Washington Chapter of the American Association of Engineers, Practical Psychology Club, and the Boy Scouts of the third division.

Among the scientific and other societies that met regularly in room 43 were the Anthropological Society of Washington, the Entomological Society of Washington, the American Horticultural Society, and the Society for Philosophical Inquiry. Those using the room from time to time were the Audubon Society of the District of Columbia during February and March for a series of talks by Dr. Alexander Wetmore; the Helminthological Society of Washington, when Prof. E. Brumpt, of the University of Paris, made an address; the Biological Society of Washington, for an address by F. Johansen; the Washington Chapter of the American Institute of Chemists; the directors and assistant directors of municipal playgrounds, the Camp Fire Girls, and the Camp Fire Guardians, and by the Garden Homes Association for addresses intended "to encourage people to own a home and garden."

Mr. Chr. Thams, minister of the Prince of Monaco to France, on November 29 gave a lecture on the results of a journey undertaken into eastern Africa for the purpose of advancing the cause of conservation of wild life. The lecture was illustrated by a fine series of moving pictures impressive for their accuracy in revealing the habits of big game under natural conditions.

At the request of the Air Service Officers Reserve Corps, pictures illustrating the flight around the world were shown in the auditorium on the evening of April 8.

On the evening of May 2 the auditorium was used for a private showing of the historical picture made for the Commission of Relief in Belgium, before Secretary Hoover, who was chairman of that organization during the years of its operation from 1914 to 1919.

The auditorium was also used by the following: The Filipino Club of Washington, on the evening of July 3, for a meeting to celebrate the Fourth of July; El Club Cervantes, on the evening of December 20, to celebrate the centenary of the Battle of Ayacucho, the decisive battle in South America's wars for independence; by Señor Don C. de Quesada, of the Cuban Embassy, on the evening of March 28 to celebrate the ratification of the treaty of the Isle of Pines and in honor of the Spanish War Veterans; the Cornell Alumni Society of Washington for a musical recital by Prof. Vladimir Karapetoff, of Cornell University, on the evening of April 23.

A national spelling bee was held in the auditorium on the evening of June 17, under the auspices of the Courier Journal and Louisville Times, of Louisville, Ky.

At the request of the Washington Chapter of the American Institute of Banking all of the exhibition halls on the ground, first, and second floors of the Natural History Building were opened on the evening of July 19 for a reception to the members of the Institute meeting in Washington at that time.

A joint meeting of the Anthropological Society of Washington, the Washington Academy of Science, the Art and Archeology League, in conjunction with the Archeological Institute of America, was held in the auditorium on the evening of December 16, during which Count Byron Kuhn de Prorok gave a lecture on the "Carthage excavations, 1924," and "The dead cities of the Sahara." After the lecture a reception was held in the Art Gallery.

As one of the features of the meeting of the American Association for the Advancement of Science, on the evening of December 29, members and their guests were received in the Art Gallery by the Secretary of the Institution and Mrs. Walcott, at which time the entire first floor of the building was open. On the evening of June 10, the halls on the first and second floors were opened for a reception to the delegates of the National Association of Credit Men attending the convention held in Washington from June 8 to 13.

MISCELLANEOUS

For the first time in the history of the Museum the total number of visitors to the several buildings reached more than 1,000,000. These were recorded at the several buildings as follows: Arts and Industries, 304,858; Natural History, 557,016; Aircraft, 52,787; Smithsonian, 107,342; a total of 1,022,003.

The Museum published 5 volumes and 70 separate papers during the year while its distribution of publications amounted to 104,596 copies of books and pamphlets.

Additions to the library numbered 1,457 books and 1,894 pamphlets, mostly obtained by exchange or donation. With the funds available, only a few books could be purchased. Important contributions which have not yet been catalogued are the bequest by the late Col. Thomas L. Casey of approximately 4,500 books and pamphlets, mostly relating to Coleoptera, which were not entirely assorted until after the close of the year, and the transfer from the Treasury Department of 800 books and pamphlets relating to the science of numismatics.

Through the operation of the reclassification act, which became effective July 1, 1924, the salary standards in the Museum, particularly of the scientific staff, were materially improved and for the first time in many years every position in the Museum personnel was filled. The staff in the department of anthropology was completed

through the appointment of Mr. Herbert W. Krieger as curator and Mr. Henry B. Collins as assistant curator of ethnology. In the department of arts and industries Miss Aida M. Doyle was appointed aid to succeed Mr. Harry W. Rabinowitz, resigned, and in the division of history Miss Hortense Hoad was appointed aid.

In accordance with the special provision, included in the last appropriation act, creating a new Assistant Secretary of the Smithsonian Institution to have general charge of the museum interests of the Institution, including the United States National Museum, the National Gallery of Art and the National Zoological Park, the present incumbent was honored with appointment to that office on the 1st of April, 1925.

The Museum lost two employees during the year through the operation of the retirement act, viz, Mr. N. P. Scudder, assistant librarian of the Smithsonian Institution, in charge of the Museum library, and Robert Ghor, fireman. The only death among employees on the active rolls of the Museum was that of Israel Freeman, a laborer, employed in the Museum over 15 years, who died on July 16, 1924.

Respectfully submitted.

ALEXANDER WETMORE,
Assistant Secretary.

Dr. CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.

APPENDIX 2

REPORT ON THE NATIONAL GALLERY OF ART

Sir: I have the honor to submit the following report on the affairs of the National Gallery of Art for the year ending June 30, 1925.

The activities of the gallery for the fifth year of its status as a separate administrative unit of the Smithsonian Institution correspond closely with those of previous years. The staff, which is limited to the director and the recorder, has been occupied during the year with the current work of the gallery; with the receipt, record, installation and care of the collections, permanent and temporary; with the affairs of the gallery commission; with the development of an art library; and with promotion of the gallery's diversified interests. Other employees are: a stenographer, a gallery attendant, three watchmen, two laborers, two charwomen, and a carpenter who is assigned to the gallery by the National Museum when his services are required.

Additions to the gallery collections have fallen short of the average of previous years, the art works received by the Institution and awaiting approval by the advisory committee of the gallery commission not greatly exceeding a hundred thousand dollars in estimated value. This falling off is due, at least in part, to the shortage of exhibition space. Further important enrichment of the collections must thus await the erection of a gallery building, since collectors seeking a final resting place for their treasures consider very carefully their prospective installation and care. Mention may be made here of the fact that during the period between 1904 and 1924, the period during which suitable exhibition space happened to be available in the museum buildings, accessions by gift and bequest averaged in value approximately half a million dollars per year. With a gallery building such as the nation should have, it is believed that a million or millions annually would be within reasonable expectation. It is hardly within the range of possibility that a second benefactor will appear who is willing to present the Government with a building for his gift as did Mr. Freer, in order that the gift might be accepted.

During the year much attention has been given to the preparation of preliminary plans for a gallery building. Although Congress in 1921 set aside an appropriate site for a building, it was left

to the Institution to obtain funds necessary for the employment of an architect to prepare the preliminary plans. As the result of an appeal for this purpose by the Institution, $10,000 was raised by private subscription, and Mr. Charles A. Platt was selected to prepare the necessary plans. During the winter of 1923–24 Mr. Platt spent several months in Europe engaged in the study of the more important art galleries. The committee appointed by the Regents of the Institution to collaborate with Mr. Platt on the plans, which included in its membership Henry White, chairman; Frederic A. Delano, Herbert Adams, Gari Melchers, J. H. Gest, and C. D. Walcott, met in the Regents' room on February 13, 1925, and Mr. Platt presented the sketch plans, which he stated had been carried just far enough to be submitted for consideration by the Institution. Two hours were spent in examining the drawings, which comprised plans of the three floors, sections of the building, and a detailed drawing of the south front. Plans of a number of European galleries were submitted for comparison, and details of lighting and adaptation of space to the various requirements of the structure were considered. Mr. Platt stated that if the regents desired to have the work proceed the plans could be ready for the beginning of construction within six months, and that if appropriations were made available, the building could be completed in three years. It was expected by Mr. Platt that granite would be employed in the building. Questions of construction, employment of builders, and cost were discussed at length. Mr. Platt stated that the building, which as planned is 300 feet in width by 500 feet in length, will contain 10,000,000 cubic feet of stonework, and that the cost will hardly fall short of $1 per cubic foot. The committee accepted the plans as entirely satisfactory and reported to that effect to the Regents of the Institution.

The Platt drawings were first published in an article which appeared in the American Magazine of Art, March, 1925, where they were accompanied for purposes of comparison by the plans of a number of the principal art museums of both Europe and America. It is expected that the Regents of the Institution will, at the proper moment, present these preliminary plans to the committees of Congress having the erection of Government buildings in charge, for their consideration.

The death of Senator Lodge, a member of the Board of Regents of the Institution, who in 1924 offered in the Senate an amendment to the deficiency appropriation bill providing seven millions for a gallery building, leaves the movement without a militant head, but another will doubtless take his place since the urgent need of a building is now very generally recognized. The movement is re-

garded as having much added strength as a result of the fact that, as indicated in the Lodge resolution, the building when completed is expected to accommodate the collections of American history as well as those of art. The historical collections are of great popular interest, occupying to-day 120,000 square feet of floor space in the Smithsonian and the two Museum buildings—space urgently needed for the legitimate activities and vast collections of the several branches of natural science.

MEETINGS OF THE GALLERY COMMISSION

The annual meeting of the gallery commission was held in the Regents' room of the Smithsonian Institution December 9, 1924. The members present were: Gari Melchers, chairman; Herbert Adams, Joseph H. Gest, John E. Lodge, Frank J. Mather, jr., Charles Moore, James Parmelee, Edward W. Redfield, Charles D. Walcott, and William H. Holmes.

The very important problem of the inclusion in the prospective gallery building of collections both of art and history, as indicated in the Lodge resolution, was given attention and the view prevailed that it would be advantageous, at least for a time, to have the two departments in the same building, although definitely separated.

The question of the acceptance of works of art by the advisory committee through the medium of correspondence was raised, and after discussion it was resolved that hereafter, a majority of the advisory committee be required to personally examine the works before making recommendation. As a result of this action and the impracticability of calling the committee to Washington for the consideration of works offered from time to time, the practice has been adopted of having all works of exceptionally high merit offered to the gallery accepted by the Smithsonian Institution for submission to the advisory committee at the annual meeting of the commission or on occasions of particular importance, at especially called meetings of the committee.

Mr. Edmund C. Tarbell was selected a member of the commission to succeed Mr. Edwin H. Blashfield, resigned, and his appointment was recommended to the Board of Regents. Regarding the expiration of the three-year terms of three members of the commission, Messrs. John E. Lodge, James Parmelee, and E. W. Redfield, it was decided to recommend to the Board of Regents the reelection of these members for the succeeding term of four years. The present members of the executive and advisory committees and the present officers of the commission were reelected for the year 1925.

The Platt plans for the proposed National Gallery Building were then presented by the secretary and were given careful consideration by the members of the commission.

The advisory committee of the commission met in the gallery December 11, Gari Melchers, Miss Leila Mechlin, and W. H. Holmes being present. The following works were given favorable consideration:

Portrait of Hon. James R. Mann, by Gari Melchers.

Three paintings, the gift of Miss Emily Tuckerman: Hindoo Merchants, by Edwin Lord Weeks; Landscape (on copper), by Herman Saftleven; and Refectory, by Eduardo Zamaçois.

The personnel of the commission is as follows: Gari Melchers, chairman; Frank Jewett Mather, jr., vice chairman; William H. Holmes, secretary; Herbert Adams, W. K. Bixby, James E. Fraser, Daniel Chester French, Joseph H. Gest, John E. Lodge, Charles Moore, James Parmelee, A. Kingsley Porter, Herbert L. Pratt, Edward W. Redfield, and Edmund C. Tarbell.

The executive committee was composed of Messrs. Moore, chairman; Gest, Holmes, Mather, jr., Parmelee, and Walcott; and the advisory committee was composed of Messrs. Redfield, chairman; Holmes, secretary; Adams, Miss Mechlin, Messrs. Melchers, Platt, and Volk.

Subcommittees are as follows:

Committee on architecture, A. Kingsley Porter, chairman.
Committee on ancient European paintings, Frank J. Mather, jr., chairman.
Committee on prints, excepting the oriental, James Parmelee, chairman.
Committee on sculpture, Herbert Adams, chairman.
Committee on American paintings, E. W. Redfield, chairman.
Committee on ceramics, Joseph H. Gest, chairman.
Committee on oriental art, John E. Lodge, chairman.
Committee on modern European paintings, Gari Melchers, chairman.
Committee on textiles, no chairman at present.

The personnel of special committee is as follows:

On National Portrait Gallery, Herbert L. Pratt, chairman.
On gallery building, Charles Moore, chairman.
On raising fund for preliminary building plans, James Parmelee, chairman; Charles Moore, Charles D. Walcott.
On selection of architect for preliminary plans, Henry White, chairman; Herbert Adams, Frederic A. Delano, J. H. Gest, Gari Melchers, Charles D. Walcott, ex officio.
On department of architecture, ——— ———.
On preservation of architectural gems, ——— ———.

ACTIVITIES OF THE AMERICAN FEDERATION OF ARTS AND THE FEDERATION OF WOMEN'S CLUBS

The work of the American Federation of Arts, in promoting the development of the national gallery, deserves appreciative mention. At its 1923 convention in St. Louis the following resolution was unanimously adopted:

Whereas the United States is the only civilized nation which has no national gallery of art; and whereas there is great need for a building to house our

national art collection which in the past few years has greatly increased in size and value through gifts and bequests of public-spirited collectors and individuals; and whereas, on account of the lack of space in which to exhibit such gifts, this channel of beneficence is now checked; Be it

Resolved, That the American Federation of Arts undertake a campaign of education and promotion throughout the United States, in order to acquaint the people of existing conditions, in the hope that it may be their will when the facts are known, that a sufficient sum be appropriated by Congress to erect a suitable building at the National Capital to house the national collections and to evidence to the world that we, as a people, recognize art to be a factor in our national life.

Miss Leila Mechlin, secretary of the American Federation of Arts, states that the federation has at present 375 chapters or affiliated organizations in all parts of the United States. The intention of the federation is to secure the cooperation of these organizations, and to interest a membership numbering several hundred thousand individuals in the gallery movement.

Of like importance in the promotion of the national gallery are the activities of the Federation of Women's Clubs under the energetic direction of Mrs. Rose V. S. Berry, chairman of the art department of the federation. This great organization, whose activities extend to every State in the Union, seeks as one of its primary responsibilities to promote the cause of art, and especially to further art education in the most comprehensive manner. It seeks to have the world realize that the place given the arts of taste in a nation is an infallible test of the place that nation holds in the scale of civilization; it maintains that the promotion of these arts is thus a national responsibility. In its lecture courses and publications it utilizes the national collections, taking occasion to lay stress upon the humiliating fact that the American nation makes no adequate provision for the acquirement, care, and utilization of collections illustrating the world's achievements in the many branches of art, ignoring the example of all other civilized nations.

SPECIAL EXHIBITIONS HELD IN THE GALLERY

An exhibit of exceptional interest held in the middle room of the gallery March 3 to April 13 comprised 19 miniatures by Mr. Alyn Williams and 34 works of sculpture by Mr. Cecil Thomas, both exhibitors being Englishmen, although Mr. Williams spends much of his time in the United States. The exhibitors very generously prepared and had printed at their own expense a catalogue of the exhibits, copies of which were freely distributed. During the exhibit and for a short period thereafter Mr. Thomas was permitted to occupy one of the gallery spare rooms as a studio where he modeled two figure groups, The Duet and The Spirit of the Dance, the inspiration for which had come to him while in Washington. While

thus engaged Mr. Thomas was fortunate in having sittings for a portrait bust by Sir Esme Howard, British ambassador to the United States. This work met with gratifying approval and a replica in plaster was presented by the sculptor to the Smithsonian Institution at a dinner given in honor of Sir Esme by the Washington Branch of the English-Speaking Union, on May 13. Presentation was made by the presiding officer of the occasion, and it was accepted by Doctor Walcott, Secretary of the Smithsonian Institution, with appropriate words of appreciation.

A collection of portraits in oil and various studies in other techniques by Leo Katz of Vienna, Austria, was shown in the two north rooms of the gallery January 10 to February 15, and the exhibit, comprising 35 items, proved of very special interest to the people of Washington.

The gallery was fortunate in being permitted to place on view from December 16 to February 15 a collection of art works in bronze and terra cotta, nine in number, mainly busts of important personages, by Mrs. Nancy Cox-McCormack. These were mounted on appropriate pedestals in the south room of the gallery and included busts of Benito Mussolini, Italian premier, in black marble, and Henry P. Fletcher, ambassador to Italy, in bronze.

A collection of 72 water-color paintings of the scenery of the national parks of the Rocky Mountain and Pacific coast regions, by Gunnar Widforss, was exhibited in the middle room of the gallery December 10 to January 10. These paintings were vivid and highly realistic presentations of many remarkable subjects and attracted much favorable attention.

THE HENRY WARD RANGER FUND

As the paintings purchased during the year by the council of the National Academy of Design from the fund provided by the Henry Ward Ranger bequest are, under certain conditions, prospective additions to the national collection, the list, including the names of the institutions to which they have been assigned, is given here:

Title	Artist	Date of purchase	Assignment
42. The Other Shore	Robert Spencer, N. A.	Dec. 1, 1924	The Newark Museum Association, Newark, N. J.
43. Nancy	Lillian Wescott Hale	do	The Denver Art Museum, Denver, Colo.
44. Their Son	Oscar E. Berninghaus	do	The Art Club of Erie, Erie, Pa.
45. The Wood Cart	Louis Paul Dessar, N. A.	Apr. —, 1925	
46. A Reading	Thomas W. Dewing, N. A.	do	
47. Dawn	Dwight W. Tryon, N. A.	do	
48. The Prodigal Son	Horatio N. Walker, N. A.	do	
49. Storm Birds	Armin Hansen	do	
50. Helen	Jerry Farnsworth	do	
51. Across the Valley	Hobart Nichols, N. A.	June 9, 1925	

The paintings purchased from the Ranger fund during the past fiscal year and unassigned at its close (1923–24) have subsequently been assigned as follows:

36. Midsummer, by William S. Robinson, N. A.; to the art gallery of Washburn College, Topeka, Kans.
37. The Bathers, by Spencer Nichols, A. N. A.; to the Art Hall of Beloit College, Beloit, Wis.
39. The Necklace, by Richard E. Miller, N. A.; to the Butler Art Institute, Youngstown, Ohio.
41. Clearing After September Gale—Maine Coast, by Howard Russell Butler, N. A.; to the Art Association of Indianapolis, Ind.

ART WORKS ADDED DURING THE YEAR

Permanent accessions of art works for the year are as follows:

Three paintings, the gift of Miss Emily Tuckerman: Hindoo Merchants, by Edwin Lord Weeks; Landscape (on copper), by Herman Saftleven; and the Refectory, by Eduardo Zamaçois.

Portrait of the late Hon. James R. Mann, member of the Board of Regents of the Institution from 1906 to 1911, by Gari Melchers; gift of Mrs. James R. Mann.

Entrance portal to the Benjamin H. Warder house, 1515 K Street NW., Washington, D. C., designed by the eminent architect, Henry Hobson Richardson (1838–1886), including the door, carved trim and voussoirs (Berea grit). Gift of the cooperating committee on architecture in the National Gallery of Art, through Mr. Horace W. Peaslee, acting chairman, and 13 subscribers.

A landscape in water color, The Patriarchs, Zion National Park, by Gunnar Widforss. Gift of the artist.

Portrait of Chauncey Mitchell Depew, by George Burroughs Torrey. Gift of the Hon. Chauncey M. Depew, for the National Portrait Gallery.

Portrait bust in plaster (bronzed) of the Rt. Hon. Sir Esme William Howard, British ambassador to the United States, by Cecil Thomas. Presented by Mr. Cecil Thomas through the Washington branch of the English-Speaking Union.

The Libyan Sibyl, a statue in Carrara marble, heroic in size, by William Wetmore Story, and a portrait bust of Napoleon Bonaparte, in Carrara marble, by Raimondo Trentanove. Presented by the estate of Henry Cabot Lodge, through Mr. John E. Lodge.

Portrait of Dr. Samuel Pierpont Langley, by Mme. M. de Leftwich-Dodge. Gift to the Smithsonian Institution from Mme. A. Langley Ciocca, of Rome, Italy, sister of Doctor Langley.

Medallion portrait (in plaster) of Dr. Charles W. Eliot, president emeritus of Harvard University, by W. Clark Noble. Gift of Mr. W. Clark Noble.

Collection of French and other art objects, including silverware, furniture, porcelains, pottery, glassware, bronzes, etc. Bequest of the Rev. Alfred Duane Pell, D. D., not as yet fully received and recorded by the gallery.

LOANS ACCEPTED BY THE GALLERY

Portrait bust in marble of the late Samuel Gompers, president of the American Federation of Labor, by Moses Wainer Dykaar; lent by the American Federation of Labor.

Four paintings lent by the estate of Henry Cabot Lodge, through Mr. John E. Lodge, as follows: Portrait of Alexander Hamilton, by John Trumbull; portrait of Fisher Ames, by Gilbert Stuart; River Landscape with Cattle, by Constant Troyon; and Stable Interior with Horses and Groom, by John F. Herring.

A painting of large size, The Annunciation, attributed to Lorenzo Sabbatini (or Lorenzino da Bologna), lent by the Misses McKey through Miss Laura M. McKey.

LOANS BY THE GALLERY

Paintings belonging to the gallery were lent for exhibition elsewhere, as follows:

The large painting entitled "The Happy Mother," by Max Bohm, lent to the Painters and Sculptors Association, Grand Central Art Galleries, to be included in an important memorial exhibition of the works of this artist in November, 1924. Returned to its place in the gallery at the close of the exhibition.

The painting entitled "June," by John W. Alexander, lent to the American Federation of Arts for a special "Alexander exhibit." The collection was shown at Albany, N. Y., in the art department of the State Teachers College, and later at Easton, Pa., where it was used by the art supervisor of the Easton school district. The painting has been returned to its place in the gallery.

The three paintings, Birch Clad Hills, by Ben Foster, A Family of Birches, by Willard Metcalf, and The Island, by Edward W. Redfield, lent to the American Federation of Arts for the International Exhibition of Paintings by American Artists held in Venice, Italy, during the summer of 1924, have been returned to the gallery.

One set of colored slides of works belonging to the gallery, lent to the American Federation of Arts, and a second set to the art department of the American Federation of Women's Clubs, are retained for utilization by these organizations. In several instances selections from the gallery's collection of slides have been lent to the normal schools of Washington and to the art department of Howard University.

DISTRIBUTIONS

Paintings lent to the gallery have been withdrawn by their owners during the year as follows:

Rosita, by I. Zuloaga; withdrawn by the Hon. John Cecil for Mrs. George W. Vanderbilt.

Portrait of His Daughter, by Titian (copy?); withdrawn by Mr. Joseph Stewart, who had purchased it from the former owner, Dr. Nathan Boyd.

Self Portrait by James Deveaux; withdrawn by Dr. Houston Mifflin, the owner, who had deposited it in the gallery through Dr. Porter F. Cope.

The Pickering Dodge Collection of seven cameos; withdrawn by Mrs Charles W. Rae.

Portrait of Chief Justice Joseph C. Hornblower and portrait of Mary B., his wife, artist unknown; portrait of Roderick Austin, attributed to Sir Godfrey Kneller; and a painting representing a sacrifice interrupted by soldiers, artist unknown; withdrawn by Mrs. Caroline B. Hornblower.

Klingle Ford, by Max Weyl; withdrawn by Mrs. John W. Smith.

PUBLICATIONS

Holmes, W. H. Report on the National Gallery of Art for the year ending June 30, 1923. Appendix 2, Report of the Secretary of the Smithsonian Institution for the year ending June 30, 1923, pp. 45–58.

——— Report on the National Gallery of Art for the year ending June 30, 1924. Appendix 2, Report of the Secretary of the Smithsonian Institution for the year ending June 30, 1924, pp. 48–58.

Catalogue of a collection of water-color paintings of the Grand Canyon of the Colorado, Yellowstone National Park, Yosemite Valley, Zion National Park, Utah National Park, and the Monterey Coast of California. Of special interest to the Interior and Agriculture Departments. By Mr. Gunnar Widforss. On view in the central room of the National Gallery, Natural History Building, United States National Museum, December 10 to January 10. Washington, 1924, pp. 1–4.

Catalogue of a collection of busts of prominent personages in bronze and terra cotta, by Mrs. Nancy Cox-McCormack, on view in the south room of the National Gallery, Natural History Building, United States National Museum, December 16, 1924, to January 16, 1925. 1924, pp. 1–4.

Catalogue of a collection of portraits and studies in different techniques, by Leo Katz, of Vienna, Austria, on view in the north rooms of the National Gallery, Natural History Building, United States National Museum, January 16 to February 15, 1925. 1925, pp. 1–4.

Catalogue of recent miniature portraits by Alyn Williams, P. R. M. S. (President, Royal Miniature Society), and portrait busts in bronze and plaster, relief portraits, medallions, carvings in precious and semiprecious stones, and some great seals, by Cecil Thomas, R. M. S., on view in the National Gallery, Natural History Building, United States National Museum, March 3 to March 22, 1925. 1925, pp. 1–8.

Respectfully submitted.

W. H. Holmes,
Director.

Dr. Charles W. Walcott,
Secretary, Smithsonian Institution.

APPENDIX 3

REPORT ON THE FREER GALLERY OF ART

SIR: I have the honor to submit the fifth annual report on the Freer Gallery of Art for the year ending June 30, 1925:

THE COLLECTION

Work has been continued during the year in the preservation of the collection, and in the print collection a total of 1,056 objects have now been put in final condition. A complete list of the Freer Gallery collection of paintings, pastels, drawings, prints, and copper plates by and attributed to American and European artists, together with a list of original Whistleriana, has been prepared and is about to be published in pamphlet form. This pamphlet will be placed on sale with the the other publications issued by the gallery.

Changes in exhibition during the year involved 46 oil paintings, 2 water colors, 12 pastels, 30 etchings and dry points, 38 lithographs, 2 Japanese screens, 3 Japanese panels, 1 Japanese *makimono*, 4 Chinese panels, 2 Chinese scrolls, 11 Chinese bronzes, 1 Indian bronze, and 2 Chinese textiles.

Additions to the collections have been as follows:

By gift of Charles A. Platt:

AMERICAN PASTEL

25.1. Whistler, James McNeill; portrait of Miss Emily Tuckerman.

By purchase:

INDIAN BRONZE

24.10. Buddhist statuette: Saṁvara (*Yi-dam*, tutelary divinity). Nepal, fifteenth century.

INDIAN PAINTING

24.4. *Laila Majnun.* Mughal, time of Jahāngīr (1606–1628).
24.5. Ādil Shāh. Mughal, time of Jahāngīr (1606–1628).
24.6. Fireworks. Illuminated manuscript on the reverse. Mughal-Rajput, time of Shāh Jahān (1628–1658). By Muhammad Afzal.
24.7. Mālaśrī Rāginī (a musical mode). Rajput, about 1600.
24.8. Bhairavī Rāginī (a musical mode). Rajput, about 1675.
24.9. A visit to a temple. Rajput-Mughal, about 1675.

CHINESE BRONZE

25.2. Ceremonial vessel of the type *tsun.* Early Chou dynasty (1122 to 255 B. C.).
25.3. Ceremonial wine vessel of the type *chio.* Chou dynasty (1122 to 255 B. C.).

CHINESE PAINTING

24.3. Landscape: Breaking waves and autumn winds. A scroll. By Tai Chin. Ming, middle fifteenth century.

NEAR EASTERN POTTERY

25.4. Bowl with painted decoration. Persian, Rhages. Twelfth-thirteenth century.
25.5. Bowl with painted decoration. Persian, Rhages. Twelfth-thirteenth century.
25.6. Bowl with decoration in gold luster. Persian. Eighth century.
25.7. A small dish with painted decoration under glaze. Arab. Tenth-eleventh century.
25.8. Bowl with engraved decoration under glaze. Persian. Ninth century.
25.9. Bowl with decoration engraved and painted under glaze. Persian. Ninth century.
25.10. Bowl with decoration engraved and painted under glaze. Persian. Ninth century.
25.11. Bowl with decoration engraved and painted under glaze. Persian. Ninth century.
25.12. Bowl with decoration painted in black over glaze. Persian. Ninth century.

Additions to the library by gift and purchase comprise 90 books and periodicals and 127 pamphlets. A list of these accompanies this report as Appendix A (not printed). Forty-six volumes have been rebound.

The work of making identification photographs for use in the card catalogue continues, and in addition, several hundred photographs and a number of lantern slides have been made to order and delivered to purchasers. Of the publications issued by the gallery, there have been sold during the year, 538 copies of gallery books, 422 copies of the Synopsis of History, and 682 copies of the descriptive pamphlet.

During the past year there has been an increasing demand upon the gallery for translations of Chinese, Japanese, and Tibetan inscriptions, and for information concerning various objects. One hundred and five such objects, consisting, for the most part, of Chinese, Tibetan, Japanese, and Korean paintings, Japanese prints, and articles of pottery and jade, have been submitted for examination.

The usual work in repairing and making exhibition cases, picture frames, stretchers, and other equipment has been done in the gallery shop, and the necessary minor repairs to the building, as well as certain improvements such as the construction of a photographic dark room in the attic, were made by the employees of the shop.

The Freer Gallery begs to acknowledge its indebtedness to the Department of Agriculture for its aid in exterminating the boxwood pest, "the leaf miner," and to thank the Fish Commission for its gift of goldfish for the fountain basin.

ATTENDANCE

The gallery has been open every day with the exception of Monday from 9 until 4.30. The total attendance for the year was 109,862. The aggregate Sunday attendance was 28,172, making an average of 541; the week-day attendance amounted to 81,690, with an average of 313. Of these visitors, 431 came to the study rooms to see objects not on exhibition or to consult books in the library; 4 to make copies or photographs, 72 to examine the building and equipment, while 27 brought objects in their possession for examination and information.

PERSONNEL

Mr. Y. Kinoshita, of the Museum of Fine Arts, Boston, worked at the gallery during the winter months on the preservation of oriental paintings.

Mr. Herbert E. Thompson worked on the preservation of oil paintings.

FIELD WORK

A detailed account of the activities of the gallery's expedition in China is contained in Appendix B (not printed) accompanying this report, and will be condensed for publication in Explorations and Field Work of the Smithsonian Institution in 1925.

Respectfully submitted.

J. E. Lodge, *Curator.*

Dr. Charles D. Walcott,
Secretary, Smithsonian Institution.

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APPENDIX 4

REPORT ON THE BUREAU OF AMERICAN ETHNOLOGY

SIR: I have the honor to submit the following report on the researches, office work, and other activities of the Bureau of American Ethnology during the fiscal year ended June 30, 1925, conducted in accordance with the act of Congress approved June 7, 1924. The act referred to contains the following item:

> American ethnology: For continuing ethnological researches among the American Indians and the natives of Hawaii, including the excavation and preservation of archeologic remains, under the direction of the Smithsonian Institution, including the necessary employees and the purchase of necessary books and periodicals, $57,160.

The policy of the Bureau of American Ethnology in the past has been that of a pioneer, but from necessity the field work of the staff has been both intensive and extensive, mainly reconnaissance. As a pioneer, the bureau has opened up new lines of research in the study of the ethnology of the American Indians and has blazed a trail for others in several fields. While contributing to science technical monographs on certain Indian tribes, it has at the same time prepared and circulated, through publication, articles of a popular character covering the whole subject. The object has been to furnish reliable data for students wishing accurate knowledge of the American Indians.

The aboriginal culture of our Indians is rapidly disappearing and being replaced by the white man's civilization. Certain tribes have already lost almost all their native customs, and others will follow rapidly until little of scientific value remains for ethnological field work. The older men among them, who in their prime knew the native cults and rituals, are passing away, and the younger generation of Indians who are taking their places are almost entirely ignorant of the significance of the rituals or ceremonials. Current fables and metaphoric stories, mainly explaining the characteristics of animals, are now often claimed to be mythologic, although many of them have value as tales, not as myths. The Indian culture is passing away and soon will be lost. It is the intention of the Bureau of American Ethnology to record it before its extinction.

The excavation and preservation of archeologic remains, from which much valuable scientific material may be obtained, constitute

a task which is only just begun. The bureau has for many years been a pioneer in this work, and in many areas it has been the only investigator. The first publication of the Smithsonian Institution was on an archeological subject, and with the passing years the bureau has followed this line of work with vigor.

It is a traditional, sound policy of the Institution, as a result of the relatively small allowance for the field study of the Indians, to cooperate, rather than to attempt to compete with those who have a much larger income. This policy has been pursued by the bureau during the past year.

The chronicles of De Soto's wonderful trip through our southeastern States introduced to the attention of historians a remarkable aboriginal American culture, one of the most advanced in North America outside of Mexico. It was, as has generally been the case, built on agriculture, and the dominant tribal religion of its civilization was a complex of Sun, Fire, and Great Serpent cults. From Tampa Bay to the Mississippi River, De Soto encountered numerous tribes differing in language and in minor ethnological features, but all belonging to the same culture with a worship characteristic wherever agriculture served as a source of food. As time went by and renewed exploration brought Europeans into more intimate contact with the Indians of the Gulf States, historians and others published many articles on their ethnology, but as the tribes were moved west of the Mississippi and the opportunities for the field worker were diminished, the time came for the ethnologist to yield to the archeologist to make his contribution to the subject. Here lies a great field for further studies, with ample work for both the historian and the archeologist.

The two areas in aboriginal America north of Mexico in which agriculture reached its highest development were the Southwest, or that part of our domain bordering on Old Mexico, and those States bordering on the Gulf of Mexico, including the mound builders from the Ohio River to the Gulf. The investigation of the southwestern or pueblo region is at present attracting many archeologists amply furnished with funds, but the Southeastern or Gulf States have been more or less overlooked. The bureau has begun an archeological reconnaissance, as far as its resources will allow, in Florida, Mississippi, Alabama, and Tennessee. Last year special attention was given to the Indian mounds at Muscle Shoals in Alabama. The work in Tennessee, southern Florida, and Mississippi, so auspiciously begun by the late Mr. W. E. Myer, has been continued by Mr. P. E. Cox, State archeologist of Tennessee. Mr. Collins, assistant curator, division of ethnology, United States National Museum, was allotted a small appropriation for preliminary

investigations and reconnaissance along the Pearl River in Mississippi, the prehistoric home of the Choctaw Tribe. The results of this work were very satisfactory.

Work on the Muskhogean culture, or the antiquities of the Gulf States, promises important results in comparative ways, and will, it is hoped, shed light on the religion of aboriginal tribes of North America. We are able to reconstruct, in a way, from historical sources, the main outlines of the Gulf culture, but the documentary references to the material culture of the Muskhogean tribes are incomplete. More information is needed regarding the ritualistic sacra, idols, ceremonial objects, and symbolism on pottery, before we can reconstruct the cultus. The material for this study is now buried in the soil, but intensive archeological work will bring it to light. In essentials, the culture of the prehistoric people of the Gulf States is such as we find universal among agricultural people in America emerging from savagery into barbarism, and the religion has much in common with that of the pueblos.

SYSTEMATIC RESEARCHES

The chief spent several weeks in reconnaissance near Florence, Ala., making excursions to several mounds in that vicinity, especially those that will be submerged when the Wilson Dam at Muscle Shoals is flooded. Mr. Gerard Fowke, who had immediate charge of the excavations in two of these mounds, obtained a considerable collection containing unique objects, among which are three rare copper ornaments, the largest ever found in the valley of the Tennessee. His report will be published later.

The chief at that time visited Montgomery, Ala., where he was most hospitably received. While there he made an examination of the Graves collection, one of the most remarkable in the State.

The chief has given advice to the National Park Service of the Interior Department on the new National Monument near Flagstaff, Ariz., which is now called by the Hopi name Wupatki. This monument includes the well preserved buildings near Black Falls on the Little Colorado, first described and figured by the writer a quarter of a century ago, at which time he recommended that they be made a National Monument, and this has now been done by proclamation of the President.

The most important collection of archeological objects received during the past year was contributed by Mr. J. C. Clarke, of Flagstaff, Ariz., custodian of the Wupatki ruin. It consists of about a hundred specimens of pottery, shell and bone implements, and other artifacts from a burial mound at Youngs Canyon excavated by workmen in the course of construction of a road near the city. These

objects were received at a time when material from that region of the Southwest was particularly desirable. The chief has prepared an illustrated report on this collection in which he calls attention to its importance. The collection contains unique specimens and is accompanied by a good catalogue by Mr. Clarke. One of the most interesting of these is a black and white pottery ladle, the handle of which is molded into a cradle containing a clay figure. There is also a finely incised head-ornament of bone, recalling those worn by the Bow priesthood at Zuñi, and suggesting similar ornaments of the Hopi idol of the war god. The collection shows evidence of cremation and urn burial.

The pottery objects are archaic, and the interiors of certain black and white food bowls are decorated with artistic figures similar to those on polychrome ware from Tokonabi, near Marsh Pass, in northern Arizona. It is probable from the pottery that the people who buried their dead at Youngs Canyon were related to a population antedating pueblos, which was scattered over a great area in Arizona from the Little Colorado north to the San Juan, and from the western boundary of the state into New Mexico. This people had no circular kivas or ceremonial rooms like those at the Mesa Verde, or the San Juan area, but they were fine potters who decorated their ware with artistic geometrical designs.

The number of written requests for information on ethnological subjects the last few years has more than doubled, and the time of the chief, as well as of the members of the staff, is correspondingly absorbed.

During the past year Mr. Earl H. Morris, under the direction of the chief of the bureau, did necessary repair work on the famous tower of the Mummy Cave House in the Canyon del Muerto, Arizona, which once contained three rooms. All woodwork on the first ceiling has been torn out; only the haggled ends of a few supports remain embedded in the walls. The cleanly peeled poles which supported the second ceiling are in place, and the third ceiling, or original roof, is still intact. It is probably the most beautiful ceiling remaining in any ruin in the Southwest, its only rivals being the coverings of one or two rooms in the north side of Pueblo Bonito, and in Spruce Tree House, Mesa Verde.

This tower has been in a dangerous condition for a long time. There was originally a retaining wall below it, rising from the very brink of the ledge, which held in place the fill of loose rock and refuse upon which the House of the Tower stands. Eventually, through erosion, all but the eastern end of this wall collapsed, probably because of the insecure foundation afforded by the abruptly sloping rock, and much of the material behind it washed over the

cliff. Later, the not infrequent winds which sweep over the cave with unbelievable force, blew out the dust and rock pebbles until the southwest corner of the tower was undermined more than 3 feet and the wall eastward weakened almost to the opposite corner.

The cracks in the west wall were wider in November, 1924, than they were a year previous. A removal of half a dozen shovelfuls from the unconsolidated mass of earth beneath the front would have loosened the large block just beyond its western end, which prevented the entire collapse of the masonry. In addition to the periodic action of the wind, each visitor who passed from the eastern to the western part of the cave trod his portion of the loose mass below the wall farther down the slope, and sent clods and pebbles rattling over the cliff. Before many years this block would have been loosened and the tower would have fallen.

During the repair work buttresses were built beneath and inclosing the large blocks under the west end of the tower and under the undermined portion of the tower, continuing back to the limit of undermining, and extending well forward of the masonry. At the junction of the two, wedges were driven to knit the new work firmly to the old. From the east end of the buttress a retaining wall was built to connect with the remnant of the old one on the brink of the ledge, and the space behind it was filled, thus providing a platform instead of the former steep slope at the southeast corner of the tower. This repair work will temporarily preserve one of the finest gems of aboriginal architecture in the entire Southwest, but it should be supplemented by the addition of "turnbuckles" anchored to the cliff and by the rebuilding of the southeast corner, which should be bonded to the east and front wall to preserve it for centuries to come.

During the fiscal year Dr. John R. Swanton, ethnologist, discovered further material bearing on the social and religious life of the Creek Indians, and this was extracted and incorporated into his papers on those subjects which are now being prepared for publication by the editor. A study also was made of the various smaller culture centers within the region covered by our present Gulf States, and a paper on the "Culture of the Southeast" was prepared as a result of this work. A short paper on the "Ethnology of the Chickasaw" was begun and carried nearly to completion, and the work of carding references to all words from the publications of early Florida missionaries in the now extinct Timucua language has been continued, and all of the words from three of the five texts and from more than half of the fourth had been extracted by the end of the year. An abbreviated handbook of the Indian tribes in the United States and Alaska was prepared to accompany a map of the same section.

Dr. Truman Michelson, ethnologist, prepared for publication a manuscript entitled "A Sauk and Fox Sacred Pack." He also wrote the Indian text of one of the great sacred packs of the Thunder gens of the Fox Indians and worked out the English version thereof. Doctor Michelson also prepared an Indian text, with English version, of the Owl dance which belongs to the Bear gens. He began translating a Fox text on the sacred pack named " Sakimage " which belongs to the Bear gens of the Fox Indians and which was taken care of by Pushetonequa, the last chief recognized by the Government. He corrected the galley proofs and the first page proofs of the fortieth annual report of the bureau, which made it possible to incorporate some additional material appurtenant to the White Buffalo Dance and Fox mortuary customs and beliefs. Doctor Michelson employed Horace Powesheik to translate 1,000 pages of Fox text which contains additional information on the Fox society known as " Those Who Worship the Little Spotted Buffalo." In June Doctor Michelson went to Tama, Iowa, to renew his researches among the Algonquian Tribe of that State. He verified the new data on the Fox society named above, and some Fox texts on the Buffalo Head Dance of the Thunder gens, obtaining much additional information of this dance and other information on the Thunder gens. A translation of the Fox text on the Sturgeon was obtained, as well as certain information on the Wolf gens.

During the fiscal year Mr. John P. Harrington, ethnologist, was engaged in the preparation for publication of his material on the excavation and early history of the Burton Mound Indian village situated at Santa Barbara, Calif., the principal rancheria of the Santa Barbara Indians. The Ambassador Hotel, which had stood on the mound for many years, and had completely barred it to scientific investigation, was destroyed by fire in the spring of 1921. By joint arrangement with the Museum of the American Indian, a thorough excavation of this mound was made, and a large and attractive collection of artifacts was obtained, as well as a mass of archeological and historical material. Mr. Harrington completed the elaboration of this material and it was submitted for publication, including maps and numerous photographs.

The old Indian name for the Burton Mound village was Syujtun. Mr. Harrington's work revealed the interesting fact, not previously pointed out, that this rancheria is mentioned four times in the " Relacion " of Juan Rodriguez Cabrillo, who discovered Alta California in 1542. Father Crespi, who kept the diary of the Portola expedition, writing in 1769, describes this village in some detail. Other early accounts tell that Yanonalit, its chief, had under him 12 other villages beside the Burton Mound. After the Indian popu-

lation was removed to the near-by Santa Barbara Mission, which was accomplished gradually after the establishment of the mission in 1782, the Franciscans erected a massive adobe warehouse on the mound, the old Indian canoe landing place in front of the mound having become "el puerto de Santa Barbara," the port of Santa Barbara. Ships visiting Santa Barbara used to get water from the large spring on the southern slope of the mound. Joseph Chapman, a young Englishman who had been captured when pirates made a raid on the California coast, purchased the mound from the Franciscans in the early twenties and started a flour mill there. In the forties the mound became the property of George Nidiver, famous otter hunter and friend of General Fremont. In the sixties the mound property was owned by Lewis T. Burton, whose name it still bears. The hotel was erected on the site in 1901. The shape and extent of the Indian village and graveyards was laboriously worked out by excavation and successive cultures traced, for the site proved to be very ancient.

In the cemetery plots, most of the bodies were buried in hunched-up positions with the head to the north, that is, in the direction of the mountain range. Many of the graves had been lined with whalebone slabs, some fine specimens of which were obtained. A great variety of belongings, large and small, had been stowed away with the bodies, and traces of matting, basketry, and wooden utensils indicated that the archeologist had been deprived of the richest treasures through decomposition in the ground. One complete wooden awl for basketry, such as is described by the early fathers, was recovered. Several of the graves contained caches of large and beautifully finished steatite bowls; these were manufactured at the steatite quarries on Santa Catalina Island and were brought up the channel for barter in Indian canoes. Screening the earth brought a surprising variety of shell and glass beads. The shell beads have been sorted and classified, and the kind of native shell used for each variety has been determined.

In 1924 the Burton Mound property was sold and subdivided. Extensive grading of the property for new streets and trenching for pipe lines of various kinds was carefully watched and reported on by Prof. D. B. Rogers, who has cooperated with Mr. Harrington in this work, and yielded new information about the stratification of the mound and a good sized additional collection of artifacts. A new hotel with large cellar excavations is about to be built on the crest of the mound and observation of these operations will doubtless add still further data to that already presented in the report.

On completing the Burton Mound paper, Mr. Harrington prepared a report on the archeology of the Santa Barbara region, dealing with

the sites adjacent to the Burton Mound along both historical and archeological lines. This is a virgin field of research and has already yielded important contributions to our knowledge of the culture sequences of the ancient California Indians of this region, which had the most specialized and highly developed culture of the State. This work illumines the fact that the early population of the channel was dense and that there were numerous wars and tribal shiftings. The section of the coast from which the islands were populated and the comparative ages of rancheria sites are also apparent from this work.

In October, 1924, Mr. R. O. Marsh brought to Washington a party of eight Tulé Indians from Panama, who remained in the city until January, 1925. This afforded opportunity for studying the language, which is a peculiarly interesting one. Possessing only 18 letters and employing them both short and long, it sounds to the ear more like Finnish than like the average American Indian language. The language may be described as melodious, simple and flexible in structure, yet very rich and extensive in vocabulary. It is spoken, with slight dialectic differences only, by a very large body of Indians, who formerly held a strip of Carribbean coast more than 240 miles long between the Canal Zone and the south of the Rio Atrato, together with the numerous fertile keys off the coast. Lists were obtained of sociological terms, names of places, plants and animals, and designations of material culture objects. Songs and speech were recorded on the dictaphone.

The Indians have been called Tulés, Cunas, Comogres, and San Blasenos. Of these names the first is preferable because it is the native name of the tribe. The word Tulé means merely "Indian," it being understood that it refers to Indians of that peculiar kind and language. It is related to the word tula, meaning 20, that is, all fingers and toes, an entire Indian.

The collection of Tulé ethnological objects donated by Mr. Marsh to the National Museum was examined with the Indian informants and the native names of the objects were recorded, together with information about their use.

The best informant in the party was Chief Igwa, who is "capitan" over some 10 keys, and is one of the leading men in the councils of the tribe. He has traveled much about the Tulé country and knows hundreds of places by name, being a good ethnogeographical informant. The chief prepared a large map showing these places.

Mr. J. N. B. Hewitt, ethnologist, left Washington, in May, 1925, for Brantford, Canada, to resume his researches among the Six (originally Five) Nations, or Tribes, of the Iroquois, the Mohawk, the Seneca, the Onondaga, the Oneida, the Cayuga, and the Tus-

carora, and also among the Munsee of the Delaware Algonquian group of languages who dwell on the Haldimand grant on the Grand River in Ontario, Canada.

Here Mr. Hewitt took up the literary interpretation, revision, and textual criticism of previously recorded voluminous Iroquoian texts relating to the Constitution of the League or Confederation of the Iroquois tribes, embodying its laws and ordinances and the rituals of the council of condolence for the deceased, and the installation of new members of the Federal and the tribal councils.

With the aid of the two best Mohawk informants available who still retain some definite knowledge of portions of the ancient institutions of the league of the Iroquois, Mr. Hewitt made a free English translation of an important one of these rituals, in addition to the free rendering of the chant of "The seven songs of farewell," and thereby recovered the symbolic reason for the very peculiar name of the former. This ritual is called Kā'rhawĕⁿ'hrā'toⁿ', in Mohawk, and Gā'hawĕⁿ'hä'di', in Onondaga, meaning, "Cast or thrown over the grand forest." When used ceremonially both these chants are separated into two portions, and the four portions alternate in their rendition in such manner that part one of the one chant is followed by part one of the other; and part two of the first is followed by part two of the second chant. But when chanted "a veil of skins" (shawls or blankets serve in modern times) must be hung across the place of assembly in such wise as to divide the mourning from the other side of the league.

Ceremonial or legislative action by the tribe or by the league is taken only through the orderly cooperation of the two sisterhoods of clans for the former, or of two sisterhoods of tribes for the latter. This dualism in the highest organic units of organization was originally based on definite mythic concepts. In either organization one sisterhood represented the female principle or the motherhood in nature, and the other sisterhood the male principle, or the fatherhood in nature. This dualism is thought to be so important that the language of the rituals and of official courtesy employ terms embodying the ethnic and mythic significance of it.

By a searching study of all symbolic terms and phrases occurring in the chants of these rituals, which impliedly might refer to the highest dramatized situation revealed by these two divided chants, the parts of which are recombined as described above, Mr. Hewitt was able to identify beyond all reasonable question the phrase "the veil of skins" with the other phrase "the grand forest." The "grand forest" represents ritualistically the totality of the forests which intervene between the lands of the mourning side of the league and those of the other side, represented as symbolically intact in

mind. It must not be overlooked that either the mother side or the father side may be the "mourning side"; the designation, of course, alternates between the two sides, depending on the fact of the loss of one or more of the members of the Federal council belonging to it at any given time.

The sisterhood of tribes functioned by the independent action of its constituent institutional units—every several tribe. In turn every tribe functioned through the organic units of its own internal organization—each several clan, to execute its prescribed part in the larger Federal action, which otherwise would not be authentic or authoritative; so that a clan or an individual in a clan, in special cases involving personal rights, might prevent vital Federal action. So personal rights were abundantly safeguarded.

Mr. Hewitt purchased a very fine specimen husk mask of the Corn Mother, with a short explanatory text.

Mr. Hewitt also made a reconnaissance trip to the Chippewa of Garden River, Canada, for the purpose of expanding and deepening his knowledge of certain Chippewa texts, recorded in 1921 by him from the dictation of Mr. George Gabaoosa, of Garden River, and also to obtain data in regard to the derivation of two very important proper names, Chippewa and Nanabozho (appearing in literature also as Neabojo, Menaboju, and Wenaboju), and also to inform himself as to the ethnologic value to be placed on the fast-fading remains of the ethnic culture of this and cognate tribes in like situations and antecedents. The myth of Mudjikewis, "The First-Born (on Earth)," commonly called the story of Nanabozho (i. e., *Inābi‘oji‘o‘*), remarkable for beauty and comprehensiveness, details the circumstances which gave rise to the name "Nanabozho." In that recital the name appears as *Inābi‘oji‘o‘* and means, "Created, or formed, by the look (of the Great Father spirit)."

The name Chippewa appears in literature in no less than 97 variant spellings, with a half dozen or more unsatisfactory definitions. But to those who first gave the name Chippewa (in its native, not Europeanized, form) to these people picture-writing was ethnically distinctive and characteristic of them as the well-known birch-bark records of these people amply testify. So the name Chippewa signifies literally, "Those who make pictographs," and thus emphasizes one of the distinctive arts of these peoples.

The Seneca in Missouri and Oklahoma were visited for the express purpose of identifying them tribally, if the available information made this possible. Since the middle of the eighteenth century these Seneca have not been closely affiliated with the Seneca Tribe of New York State and Canada. There has been expressed doubt that these western Seneca had the right to this name. But after

visiting and interviewing many families of these western Seneca dwelling about Seneca, Mo., and Miami and Picher, Okla., Mr. Hewitt was convinced that they are mainly emigrants from the parent Seneca Tribe of New York and Canada and from the Cayuga of these last-named places; naturally, there are also some families of other Iroquoian Tribes, such as the Wyandot and possibly the Conestoga. A porcupine clan and a fox clan were reported. The last was a Conestoga clan.

Mr. Francis La Flesche, ethnologist, completed his paper on two versions of the child-naming rite of the Osage Tribe. The first version belongs to the In-gthon-ga or Puma gens, and the second to the Tsi-zhu Wa-shta-ge or Tsi-zhu Peacemaker gens. Each gens has its own version of the rite and no other gens can use it without permission. This paper contains 201 typewritten pages and 20 illustrations. Mr. La Flesche spent a part of the month of May and all of June, 1925, among the Osages. In the early part of this visit he and his assistant, Ku-zhi-si-e, a full-blood Osage, undertook the laborious task of properly recording the gentile personal names used by the full-blood members of the tribe and by some of the mixed bloods. Superintendent J. George Wright, of the Osage Agency, kindly permitted them to use as a guide in doing this work an annuity pay roll of the third and fourth quarters of the year 1877, which was found in the files of his office. This roll contains about 1,900 Indian names, most of them misspelled. Besides correcting the spelling of the names, Mr. La Flesche and his assistant added to the name of each annuitant the name of his or her gens. Ku-zhi-si-e was much amused to learn that his boy name, "I-tse-tha-gthin-zhi," was carried on the pay roll as "E-stah-o-gra-she," and that the boy name of his friend Wa-non-she-zhin-ga was put on the rolls as Me-pah-scah, instead of "In-bae-sca," the correct name.

When the work of revising the names on the annuity roll was concluded, Ku-zhi-si-e drove over the hills on his farm with Mr. La Flesche and showed him many wild plants which were useful to the Indians as medicine or food. Some of these plants were woven into large mats for house covering, and into rugs to spread on the floor of the house to sit upon.

Wo-non-she-zthin-ga (the chief of the tribe) also took tramps among the trees on his farm with Mr. La Flesche, and showed him a number of trees and explained to him their uses, and gave to him their native names, which he recorded. This man pointed out a tree which he called "Zhon-sa-gi," hard wood. The saplings of this tree he said were used for the frames of the houses. When green the wood was easily cut with a knife or ax, but when sea-

soned it was very hard to cut. The chief cut a branch from a small tree and carried it with him when he and Mr. La Flesche returned to the house. The chief whittled off some of the bark from the branch and dipped the shavings in a glass of water and the water quickly became blue like indigo. Mr. Paul C. Standley identified this tree as the blue ash, or *Fraxinus quadrangulata.*

SPECIAL RESEARCHES

The following manuscripts of Indian music have been purchased during the fiscal year from Miss Francis Densmore: "War, wedding and social songs of the Makah Indians," "Songs connected with Makah feasts and dances," "Music and customs of the Tulé Indians of Panama," "Songs and instrumental music of the Tulé Indians of Panama," "Songs for children and material culture of the Makah Indians," and 17 mathematical group analyses of 167 Papago songs, according to the method of such analyses in previous work. This material (apart from the group analyses) comprises 150 pages of text, numerous photographic illustrations, and the transcriptions of 69 songs, together with the original phonograph records and descriptive and tabulated analyses of individual songs. The last named are the analyses from which the mathematical analyses are made, these showing the peculiarities of the songs of an entire tribe with results expressed in percentages. These in turn form the basis for comparative tables, which show the characteristics of the music of different tribes. Such tables of comparison in "Mandan and Hidatsa Music" comprise 820 songs collected among six tribes, and material awaiting publication will add more than 500 songs to this number, including songs of widely separated tribes. It seems possible that these tables may show a connection between the physical environment of the Indians and the form assumed by their songs, as interesting contrasts appear in the songs of different tribes.

The final paper on the Makah Indians included a description of the uses of 26 plants in food, medicine, and dye. Specimens of the plants had been obtained on the reservation, and their botanical indentification was made by Mr. Paul C. Standley, of the United States National Museum. The Makah were head hunters and a detailed account of their war customs was presented. The caste system prevailed in former days and families of the upper class had wealth and leisure. The wedding customs were marked by festivity and by physical contests, the songs of which were submitted.

The presence in Washington of a group of Tulé Indians from the Province of Colon, Panama, made possible a study of forms of primi-

tive music which, it is believed, have not hitherto been described. The Tulé Indians are unique in that they do not pound on a drum, a pole, or any other object. Their favorite musical instrument is the "pan pipe" of reeds. Two men usually play these pipes, sounding alternate tones. The music of these pan pipes was phonographically recorded and transcribed as nearly as is possible in musical notation. An instrument which, as far as known, has not been previously observed, is a reed flute having two finger holes but no "whistle opening." The upper end of the reed is held inside the mouth, possibly touching the roof of the mouth, and for this reason the instrument is designated as a "mouth flute." A gourd rattle, conch shell horn, and bone whistle complete the musical instruments of these Indians.

The words of the songs narrate a series of events, such as the preparation for a wedding and a description of the festivity, or the illness and death of a man, followed by "talking to his spirit." Chief Igwa Nigidibippi, who recorded the songs, was a trained singer.

EDITORIAL WORK AND PUBLICATIONS

The editing of the publications of the bureau was continued through the year by Mr. Stanley Searles, editor, assisted by Mrs. Frances Nichols, editorial assistant. The status of the publications is presented in the following summary.

PUBLICATIONS ISSUED

Thirty-eighth Annual Report. Accompanying paper: An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians, by Walter E. Roth. 745 pp., 183 pls., 341 figs.

Thirty-ninth Annual Report. Accompanying paper: The Osage Tribe; The Rite of Vigil, by Francis La Flesche. 636 pp., 17 pls., 4 figs. (Received July 13, 1925.)

Bulletin 78. Handbook of the Indians of California, by A. L. Kroeber. x, 995 pp., 83 pls., 78 figs. (Received July 17, 1925.)

PUBLICATIONS IN PRESS OR IN PREPARATION

Fortieth Annual Report. Accompanying papers: The Mythical Origin of the White Buffalo Dance of the Fox Indians; The Autobiography of a Fox Indian Woman; Notes on Fox Mortuary Customs and Beliefs; Notes on the Fox Society Known as "Those Who Worship the Little Spotted Buffalo"; The Traditional Origin of the Fox Society Known as "The Singing Around Rite" (Michelson).

Forty-first Annual Report. Accompanying papers: Coiled Basketry in British Columbia and Surrounding Region (Boas, assisted by Haeberlin, Roberts, and Teit); Two Prehistoric Villages in Middle Tennessee (Myer).

Forty-second Annual Report. Accompanying papers: Social Organization and Social Usages of the Indians of the Creek Confederacy; Religious Beliefs and Medical Practices of the Creek Indians; The Culture of the Southeast (Swanton).

DISTRIBUTION OF PUBLICATIONS

The distribution of the publications of the bureau has been continued under the immediate charge of Miss Helen Munroe, assisted by Miss Emma Powers. Publications were distributed as follows:

Report volumes and separates	3,426
Bulletins and separates	3,458
Contributions to North American ethnology	38
Introductions	5
Miscellaneous publications	427
	7,354

As compared with the fiscal year ended June 30, 1924, there was a decrease of 6,609 publications distributed. This was undoubtedly due not to a decrease in applications, but to the fact that only one publication was distributed during the year just ended, whereas four publications were issued in the preceding fiscal year and distributed to the mailing list.

ILLUSTRATIONS

Mr. DeLancey Gill, illustrator, with the assistance of Mr. Albert Sweeney, continued the preparation of the illustrations of the bureau. A summary of the work follows:

Illustrations mounted, retouched, and made ready for engraving	927
Drawing of objects, maps, etc., prepared	38
Portraits of visiting Indians (2 Kiowa, 8 Tulé)	27
Negative films from field exposures	54
Photostat prints from books and manuscripts	178
Negatives of ethnologic and archeologic subjects	273
Photographic prints for distribution and office use	1,649

On account of the large amount of illustrative work, reclassification of the large collection of negatives has not progressed as rapidly as last year. About 7,000 negatives have so far been catalogued.

LIBRARY

The reference library has continued under the immediate care of Miss Ella Leary, librarian, assisted by Mr. Thomas Blackwell. During the year 480 books were accessioned. Of these 100 were acquired by purchase, 280 by gift and exchange, and 100 by binding of periodicals. The periodicals currently received number about 975, of which 40 are by subscription, the remainder through exchange. The library has also received 187 pamphlets. The aggregate number of volumes in the library at the close of the year was 26,101; of pamphlets, 15,512; also several thousand unbound periodicals. The Library of Congress, officers of the executive departments, and out-of-town students have made use of the library through frequent loans during the year.

COLLECTIONS

The following collections, purchased or acquired by members of the bureau or by those detailed in connection with its researches, have been transferred to the United States National Museum:

83522. Small collection of ethnologia purchased by the bureau from Miss Emily S. Cook.

84260. Collection of archeological material secured by Mr. D. L. Reichard for the bureau, from Berryville, Va.

84444. Small stone celt, and a lot of pottery bowl ornaments from Porto Rico, presented to the bureau by Mrs. Alice de Santiago, Barceloneta, P. R.

85018. Collection of archeological material collected for the bureau by Gerard Fowke from mounds near Town Creek, Ala.

85019. Archeological material collected for the bureau by Dr. J. Walter Fewkes, from mounds near St. Petersburg, Fla.

85319. Archeological material collected for the bureau by Gerard Fowke, from mounds near Town Creek, Ala., on the site of the Wilson Dam, Muscle Shoals.

85343. Stone bird pipe found near Hydes Ferry, on the Cumberland River, about 7 miles below Nashville, Tenn.

85344. Five complete skulls and fragmentary remains of about twelve crania collected by Gerard Fowke from Hog Island Mound, near Town Creek, Ala.

Five skulls collected by Earle O. Roberts, Harrah, Wash.

85780. Collection of skeletal material secured by Gerard Fowke at the Alexander Mound near Courtland, Ala.

85781. Collection of skeletal material which was unearthed 1¼ miles north of Boynton, Fla., and sent to the bureau by Mr. E. S. Jackson, of Palm Beach, Fla.

85824. Collection of archeological objects secured by Mr. J. O. Sanderson, of Courtland, Ala., and purchased by the bureau.

85856. Two pipes, one of steatite and the other of marble, collected for the bureau by Gerard Fowke from the Alexander Mound in Lawrence County, Ala.

87297. Collection of archeological material secured for the bureau at Youngs Canyon, about 18½ miles east of Flagstaff, Ariz., by Mr. J. C. Clarke, of Flagstaff.

83949. Human remains from Weeden Island, St. Petersburg, Fla., secured by the chief of the bureau during the winter of 1923–24.

MISCELLANEOUS

Clerical: The correspondence and other clerical work of the office has been conducted by Miss May S. Clark, clerk to the chief. Mr. Anthony W. Wilding, typist, has been engaged in copying manuscripts and in various duties connected with the office of the chief. Miss Julia Atkins, stenographer and typist, resigned October 15, 1924. Mrs. A. H. Kitchen was appointed temporarily December 13, 1924, for the three months, the appointment terminating March 13, 1925. Miss Mae W. Tucker was appointed temporarily May 1, 1925, as stenographer and typist.

Respectfully submitted.

J. Walter Fewkes, *Chief.*

Dr. Charles D. Walcott,
Secretary, Smithsonian Institution.

APPENDIX 5

REPORT ON THE INTERNATIONAL EXCHANGES

SIR: I have the honor to submit the following report on the operations of the International Exchange Service during the fiscal year ending June 30, 1925:

The congressional appropriation allowed for the support of the exchange service during the year 1925 was $49,550, $6,550 more than the amount granted for the fiscal year 1924. Of this increase about half was to cover the extra amount necessary for reclassification of salaries. The usual appropriation of $200 for printing and binding was granted by Congress. There was collected by the Institution on account of repayment from departmental and other establishments $4,900.22, making the total resources available for carrying on the Smithsonian system of exchanges for the fiscal year 1925 $54,650.22.

During the year the total number of packages handled was 468,731, an increase over the number for the preceding year of 8,073. These packages weighed a total of 506,164 pounds, a loss of 60,943 pounds. This decrease in weight is due to the smaller size of packages of publications received for transmission through the service.

The number and weight of the packages of different classes are indicated in the following table:

	Packages		Weight	
	Sent	Received	Sent	Received
			Pounds	*Pounds*
United States parliamentary documents sent abroad	198,862		86,337	
Publications received in return for parliamentary documents		4,702		12,851
United States departmental documents sent abroad	142,911		158,029	
Publications received in return for departmental documents		5,734		20,377
Miscellaneous scientific and literary publications sent abroad	90,797		164,018	
Miscellaneous scientific and literary publications received from abroad for distribution in the United States		25,725		64,552
	432,570	36,161	408,384	97,780
Grand total	468,731		506,164	

The value of the material passing through the International Exchange Service cannot be estimated by the mere number of packages handled. Many of the packages each contain a number of valuable scientific publications. It may be estimated that annually there pass through the service both to and from foreign countries, considerably more than a million publications.

Although the United States Government sends abroad more publications than it receives in exchange, the disparity is not so great as appears in the above table, for many foreign publications are received direct by mail by correspondents in this country.

Latvia, which joined both conventions in 1924, has established a service of international exchanges under the state library at Riga.

The total number of boxes used in despatching consignments was 2,325. This was a decrease of 139 from the preceding year and is accounted for by the smaller size of the packages received for transmission abroad, as referred to above. Of the total number of boxes shipped abroad, 268 were for the foreign depositories of full sets of United States governmental documents, and the remainder (2,057) was for distribution to miscellaneous establishments and individuals. While the Smithsonian Exchange Service, as a rule, transmits its consignments to other countries in boxes, sometimes the packages that accumulate for a particular country are not of sufficient bulk to warrant their transmission by freight, and they are mailed directly to their destinations. In addition, quite a number of packages are forwarded by mail to remote places which cannot be reached through the existing exchange agencies. During the year the number of packages sent abroad in this manner was 39,499.

The number of boxes sent to each country is given in the following table:

Consignments of exchanges for foreign countries

Country	Number of boxes	Country	Number of boxes
Argentine Republic	43	Latvia	6
Austria	54	Lithuania	3
Belgium	58	Mexico	5
Bolivia	2	Netherlands	86
Brazil	34	New South Wales	29
British Colonies	11	NewZealand	22
Bulgaria	1	Nicaragua	1
Canada	20	Norway	33
Chile	22	Palestine	4
China	50	Paraguay	2
Chosen	6	Peru	19
Colombia	18	Poland	38
Costa Rica	12	Portugal	19
Cuba	5	Queensland	16
Czechoslovakia	80	Roumania	14
Danzig	3	Russia	98
Denmark	41	Salvador	2
Ecuador	2	Siam	3
Egypt	12	South Australia	20
Esthonia	10	Spain	36
Finland	20	Sweden	70
France	174	Switzerland	68
Germany	289	Tasmania	11
Great Britain and Ireland	303	Turkey	8
Greece	12	Union of South Africa	37
Guatemala	2	Uruguay	14
Honduras	2	Venezuela	10
Hungary	39	Victoria	40
India	42	Western Australia	11
Italy	98	Yugoslavia	17
Jamaica	2		
Japan	116	Total	2,325

FOREIGN DEPOSITORIES OF UNITED STATES GOVERNMENTAL DOCUMENTS

In accordance with the terms of a convention concluded at Brussels March 15, 1886, and under authority granted by Congress in resolutions approved March 2, 1867, and March 2, 1901, 58 full sets of United States official documents and 40 partial sets are now sent through the exchange service regularly to depositories abroad. This is a reduction of one full set from last year and an addition of two partial sets. New Zealand requested that a partial set be sent to the General Assembly Library instead of a full set. The Stadtbibliothek of the Free City of Danzig was added to the list of those receiving partial sets. The number of full and partial sets of governmental documents forwarded to foreign depositories therefore is 98. The total number provided by law for this purpose and for the use of the Library of Congress has been increased by act of Congress approved March 3, 1925, from 100 to 125.

The convention referred to above, which was the first of two conventions concluded at Brussels March 15, 1886, and is referred to as Convention A, provides for the international exchange of official documents and scientific and literary publications. The second convention, referred to as Convention B, provides for the interparliamentary exchange of the official journal as well as of the parliamentary annals and documents. Convention A was ratified by the United States, Belgium, Brazil, Italy, Portugal, Serbia (now Yugoslavia), Spain and Switzerland. Convention B was ratified by the same countries except Switzerland. Since the ratification of the Brussels conventions the following countries have signified their adherence thereto in the order in which they are listed:

1. Uruguay—both conventions, 1889.
2. Argentine Republic—convention A, 1889.
3. Paraguay—convention A, 1889.
4. Czechoslovakia—both conventions, 1919.
5. Poland—convention A, 1920; convention B, 1921.
6. Roumania—both conventions, 1923.
7. Hungary—both conventions, 1923.
8. Dominican Republic—both conventions, 1923.
9. Latvia—both conventions, 1924.
10. Free City of Danzig—both conventions, 1924.

It therefore will be seen that 18 countries have thus far joined the Brussels conventions of 1886. In order to give consideration to the question of having a larger number of countries adhere to the exchange conventions, the committee on intellectual cooperation of the League of Nations called together at Geneva in the summer of 1924 a committee of experts on the international exchange of publications, a brief report of which is given elsewhere.

At the request of the Governments of Finland and the United Provinces of Agra and Oudh, the depositories of partial sets of official documents have been changed from the Central Library of the State to the Parliamentary Library, and from the Colonial Secretary's office to the University of Allahabad, respectively.

The names of the depositories in foreign countries are given in the following list:

DEPOSITORIES OF FULL SETS

ARGENTINE REPUBLIC: Ministerio de Relaciones Exteriores, Buenos Aires.
AUSTRALIA: Library of the Commonwealth Parliament, Melbourne.
AUSTRIA: Bundesamt für Statistik, Schwarzenbergstrasse 5, Vienna I.
BADEN: Universitäts-Bibliothek, Freiburg. (Depository of the State of Baden.)
BAVARIA: Staats-Bibliothek, Munich.
BELGIUM: Bibliothèque Royale, Brussels.
BRAZIL: Bibliotheca Nacional, Rio de Janeiro.
BUENOS AIRES: Biblioteca de la Universidad Nacional de la Plata. (Depository of the Province of Buenos Aires.)
CANADA: Library of Parliament, Ottawa.
CHILE: Biblioteca del Congreso Nacional, Santiago.
CHINA: American-Chinese Publication Exchange Department, Shanghai Bureau of Foreign Affairs, Shanghai.
COLOMBIA: Biblioteca Nacional, Bogotá.
COSTA RICA: Oficina de Depósito y Canje Internacional de Publicaciones, San José.
CUBA: Secretaría de Estado (Asuntos Generales y Canje Internacional), Habana.
CZECHOSLOVAKIA: Bibliothèque de l'Assemblée Nationale, Prague.
DENMARK: Kongelige Bibliotheket, Copenhagen.
ENGLAND: British Museum, London.
ESTHONIA: Riigiraamatukogu (State Library), Reval.
FRANCE: Bibliothèque Nationale, Paris.
GERMANY: Deutsche Reichstags-Bibliothek, Berlin.
GLASGOW: City Librarian, Mitchell Library, Glasgow.
GREECE: Bibliothèque Nationale, Athens.
HUNGARY: Hungarian House of Delegates, Budapest.
INDIA: Imperial Library, Calcutta.
IRISH FREE STATE: National Library of Ireland, Dublin.
ITALY: Biblioteca Nazionale Vittorio Emanuele, Rome.
JAPAN: Imperial Library of Japan, Tokyo.
LONDON: London School of Economics and Political Science. (Depository of the London County Council.)
MANITOBA: Provincial Library, Winnipeg.
MEXICO: Biblioteca Nacional, Mexico.
NETHERLANDS: Bibliotheek van de Tweede Kamer der Staten-Generaal, The Hague.
NEW SOUTH WALES: Public Library of New South Wales, Sydney.
NORTHERN IRELAND: Ministry of Finance, Belfast.
NORWAY: Universitets-Bibliotek, Oslo. (Depository of the Government of Norway.
ONTARIO: Legislative Library, Toronto.

PARIS: Préfecture de la Seine.
PERU: Biblioteca Nacional, Lima.
POLAND: Bibliothèque du Ministère des Affaires Etrangères, Warsaw.
PORTUGAL: Bibliotheca Nacional, Lisbon.
PRUSSIA: Preussische Staatsbibliothek, Berlin, N. W. 7.
QUEBEC: Library of the Legislature of the Province of Quebec, Quebec.
QUEENSLAND: Parliamentary Library, Brisbane.
RUSSIA: Shipments temporarily suspended.
SAXONY: Sächsische Landesbibliothek, Dresden—N. 6.
SOUTH AUSTRALIA: Parliamentary Library, Adelaide.
SPAIN: Servicio del Cambio Internacional de Publicaciones, Cuerpo Facultativo de Archiveros, Bibliotecarios y Arqueólogos, Madrid.
SWEDEN: Kungliga Biblioteket, Stockholm.
SWITZERLAND: Bibliothèque Centrale Fédérale, Berne.
SWITZERLAND: Library of the League of Nations, Palace of Nations, Quai de Leman, Geneva.
TASMANIA: Parliamentary Library, Hobart.
TURKEY: Shipments temporarily suspended.
UNION OF SOUTH AFRICA: State Library, Pretoria, Transvaal.
URUGUAY: Oficina de Canje Internacional de Publicaciones, Montevideo.
VENEZUELA: Biblioteca Nacional, Caracas.
VICTORIA: Public Library of Victoria, Melbourne.
WESTERN AUSTRALIA: Public Library of Western Australia, Perth.
WURTTEMBERG: Landesbibliothek, Stuttgart.
YUGOSLAVIA: Ministère des Affaires Étrangères, Belgrade.

DEPOSITORIES OF PARTIAL SETS

ALBERTA: Provincial Library, Edmonton.
ALSACE-LORRAINE: Bibliothèque Universitaire et Régionale de Strasbourg, Strasbourg.
BOLIVIA: Ministerio de Colonización y Agricultura, La Paz.
BRAZIL: Bibliotheca da Assemblea Legislativa do Estado do Rio de Janeiro, Nictheroy.
BREMEN: Senatskommission für Reichs- und Auswärtige Angelegenheiten.
BRITISH COLUMBIA: Legislative Library, Victoria.
BRITISH GUIANA: Government Secretary's Office, Georgetown, Demerara.
BULGARIA: Ministère des Affaires Étrangères, Sofia.
CEYLON: Colonial Secretary's Office (Record Department of the Library), Colombo.
DANZIG: Stadtbibliothek, Free City of Danzig.
ECUADOR: Biblioteca Nacional, Quito.
EGYPT: Bibliothèque Khédiviale, Cairo.
FINLAND: Parliamentary Library, Helsingfors.
GUATEMALA: Secretary of the Government, Guatemala.
HAITI: Secrétaire d'Etat des Relations Extérieures, Port-au-Prince.
HAMBURG: Senatskommission für die Reichs- und Auswärtigen Angelegenheiten.
HESSE: Landesbibliothek, Darmstadt.
HONDURAS: Secretary of the Government, Tegucigalpa.
JAMAICA: Colonial Secretary, Kingston.
LATVIA: Bibliothèque d'Etat, Riga.
LIBERIA: Department of State, Monrovia.

LOURENÇO MARQUEZ: Government Library, Lourenço Marquez.
LÜBECK: President of the Senate.
MADRAS, PROVINCE OF: Chief Secretary to the Government of Madras, Public Department, Madras.
MALTA: Minister for the Treasury, Valetta.
NEW BRUNSWICK: Legislative Library, Fredericton.
NEWFOUNDLAND: Colonial Secretary, St. John's.
NEW ZEALAND: General Assembly Library, Wellington.
NICARAGUA: Superintendente de Archivos Nacionales, Managua.
NOVA SCOTIA: Provincial Secretary of Nova Scotia, Halifax.
PANAMA: Secretaría de Relaciones Exteriores, Panama.
PARAGUAY: Sección Canje Internacional de Publicaciones del Ministerio de Relaciones Exteriores, Estrella 563, Asunción.
PRINCE EDWARD ISLAND: Legislative Library, Charlottetown.
ROUMANIA: Academia Romana, Bukharest.
SALVADOR: Ministerio de Relaciones Exteriores, San Salvador.
SASKATCHEWAN: Government Library, Regina.
SIAM: Department of Foreign Affairs, Bangkok.
STRAITS SETTLEMENTS: Colonial Secretary, Singapore.
UNITED PROVINCES OF AGRA AND OUDH: University of Allahabad, Allahabad.
VIENNA: Bürgermeister-Amt der Stadt Wien.

INTERPARLIAMENTARY EXCHANGE OF OFFICIAL JOURNAL

The interparliamentary exchange is conducted by the Smithsonian Institution in behalf of the United States Government under the authority granted in a congressional resolution approved March 4, 1909, the object of that resolution being to carry into effect the provisions of the second convention concluded at Brussels in 1886, providing for the immediate exchange of the Official Journal, the United States being one of the signatories to that convention.

The immediate exchange has been entered into during the year with India and the Free City of Danzig. The names of the establishments to which the daily issue of the Congressional Record is mailed are given below:

ARGENTINE REPUBLIC: Biblioteca del Congreso Nacional, Buenos Aires.
AUSTRALIA: Library of the Commonwealth Parliament, Melbourne.
AUSTRIA: Bibliothek des Nationalrates, Wien I.
BADEN: Universitäts-Bibiliothek, Heidelberg.
BELGIUM: Bibliothèque de la Chambre des Représentants, Brussels.
BOLIVIA: Câmara de Diputados, Congreso Nacional, La Paz.
BRAZIL: Bibliotheca do Congresso Nacional, Rio de Janeiro.
BUENOS AIRES: Biblioteca del Senado de la Provincia de Buenos Aires, La Plata.
CANADA:
Library of Parliament, Ottawa.
Clerk of the Senate, Houses of Parliament, Ottawa.
COSTA RICA: Oficina de Depósito y Canje Internacional de Publicaciones, San José.

CUBA:
Biblioteca de la Cámara de Representantes, Habana.
Biblioteca del Senado, Habana.
CZECHOSLOVAKIA: Bibliothèque de l'Assemblée Nationale, Prague.
DANZIG: Stadtbibliothek, Danzig.
DENMARK: Rigsdagens Bureau, Copenhagen.
ESTHONIA: Riigiraamatukogu (State Library), Reval.
FRANCE:
Bibliothèque de la Chambre des Députés, au Palais Bourbon, Paris.
Bibliothèque du Sénat, au Palais du Luxembourg, Paris.
GREAT BRITAIN: Library of the Foreign Office, Downing Street, London, S. W. 1.
GREECE: Library of Parliament, Athens.
GUATEMALA: Biblioteca de la Oficina Internacional Centro-Americana, 8a Calle Poniente No. 1, Ciudad de Guatemala.
HAITI: Secrétaire d'État des Relations Extérieures, Port-au-Prince.
HONDURAS: Biblioteca del Congreso Nacional, Tegucigalpa.
HUNGARY: Bibliothek des Abgeordnetenhauses, Budapest.
INDIA: Legislative Library, Simla.
ITALY:
Biblioteca della Camera dei Deputati, Palazzo di Monte Citorio, Rome.
Biblioteca del Senato del Regno, Palazzo Madama, Rome.
LATVIA: Library of the Saeima, Riga.
LIBERIA: Department of State, Monrovia.
NEW SOUTH WALES: Library of Parliament, Sydney.
NEW ZEALAND: General Assembly Library, Wellington.
NORWAY: Stortingets Bibliotek, Oslo.
PERU: Cámara de Diputadoes, Congreso Nacional, Lima.
POLAND: Monsieur le Ministre des Affaires Étrangères, Warsaw.
PORTUGAL: Bibliotheca do Congresso da Republica, Lisbon.
PRUSSIA: Bibliothek des Abgeordnetenhauses, Prinz-Albrechtstrasse 5, Berlin, S. W. 11.
QUEENSLAND: Chief Secretary's Department, Brisbane.
ROUMANIA: Bibliothèque de la Chambre des Députés, Bukharest.
SPAIN:
Biblioteca del Congreso de los Diputados, Madrid.
Biblioteca del Senado, Madrid.
SWITZERLAND:
Bibliothèque de l'Assemblée Fédérale Suisse, Berne.
Library of the League of Nations, Geneva.
TRANSVAAL: State Library, Pretoria.
UNION OF SOUTH AFRICA: Library of Parliament, Cape Town.
URUGUAY: Biblioteca de la Cámara de Representantes, Montevideo.
VENEZUELA: Cámara de Diputados, Congreso Nacional, Caracas.
WESTERN AUSTRALIA: Library of Parliament of Western Australia, Perth.
YUGOSLAVIA: Library of the Skupshtina, Belgrade.

There are at present 43 different foreign States or Provinces with which the immediate exchange of the Official Journal is carried on. To some of the countries two copies of the Congressional Record are forwarded—one to the upper and one to the lower house of Parliament. The total number of records transmitted is 49. The number of copies of the record set aside by law for this purpose is 100.

FOREIGN EXCHANGE AGENCIES

A complete list of the foreign exchange agencies or bureaus is given below:

ALGERIA, *via* France.
ANGOLA, *via* Portugal.
ARGENTINE REPUBLIC: Comisión Protectora de Bibliotecas Populares, Calle Córdoba 931, Buenos Aires.
AUSTRIA: Bundesamt für Statistik, Schwarzenbergstrasse 5, Vienna I.
AZORES, *via* Portugal.
BELGIUM: Service Belge des Échanges Internationaux, Rue des Longs-Chariots 46, Brussels.
BOLIVIA: Oficina Nacional de Estadística, La Paz.
BRAZIL: Serviço de Permutações Internacionaes, Bibliotheca Nacional, Rio de Janeiro.
BRITISH COLONIES: Crown Agents for the Colonies, London.
BRITISH GUIANA: Royal Agricultural and Commercial Society, Georgetown.
BRITISH HONDURAS: Colonial Secretary, Belize.
BULGARIA: Institutions Scientifiques de S. M. le Roi de Bulgarie, Sofia.
CANARY ISLANDS, *via* Spain.
CHILE: Servicio de Canjes Internacionales, Biblioteca Nacional, Santiago.
CHINA: American-Chinese Publication Exchange Department, Shanghai Bureau of Foreign Affairs, Shanghai.
CHOSEN: Government General, Keijo.
COLOMBIA: Oficina de Canjes Internacionales y Reparto, Biblioteca Nacional, Bogotá.
COSTA RICA: Oficina de Depósito y Canje Internacional de Publicaciones, San José.
CZECHOSLOVAKIA: Service Tchécoslovaque des Échanges Internationaux, Bibliothèque de l'Assemblée Nationale, Prague 1–79.
DANZIG: Amt für den Internationalen Schriftenaustausch der Freien Stadt Danzig, Stadtbibliothek, Danzig.
DENMARK: Kongelige Danske Videnskabernes Selskab, Copenhagen.
DUTCH GUIANA: Surinaamsche Koloniale Bibliotheek, Paramaribo.
ECUADOR: Ministerio de Relaciones Exteriores, Quito.
EGYPT: Sent by mail.
ESTHONIA: Riigiraamatukogu (State Library), Reval.
FINLAND: Delegation of the Scientific Societies of Finland, Helsingfors.
FRANCE: Service Français des Échanges Internationaux, 110 Rue de Grenelle, Paris.
GERMANY: Amerika-Institut, Universitätstrasse 8, Berlin, N. W. 7.
GREAT BRITAIN AND IRELAND: Messrs. Wheldon & Wesley, 2, 3, and 4 Arthur St., New Oxford St., London, W. C. 2.
GREECE: Bibliothèque Nationale, Athens.
GREENLAND, *via* Denmark.
GUATEMALA: Instituto Nacional de Varones, Guatemala.
HAITI: Secrétaire d'État des Relations Extérieures, Port-au-Prince.
HONDURAS: Biblioteca Nacional, Tegucigalpa.
HUNGARY: Service Hongrois des Échanges Internationaux, Musée Nationale, Budapest, VIII.
ICELAND, *via* Denmark.
INDIA: Superintendent of Stationery, Bombay.

ITALY: Ufficio degli Scambi Internazionali, Biblioteca Nazionale Vittorio Emanuele, Rome.
JAMAICA: Institute of Jamaica, Kingston.
JAPAN: Imperial Library of Japan, Tokyo.
JAVA, *via* Netherlands.
LATVIA: Service des Échanges Internationaux, Bibliothèque d'État de Lettonie, Riga.
LIBERIA: Bureau of Exchanges, Department of State, Monrovia.
LITHUANIA: Sent by mail.
LOURENÇO MARQUEZ, *via* Portugal.
LUXEMBURG, *via* Belgium.
MADAGASCAR, *via* France.
MADEIRA, *via* Portugal.
MOZAMBIQUE, *via* Portugal.
NETHERLANDS: Bureau Scientifique Central Néerlandais, Bibliothèque de l'Académie Technique, Delft.
NEW SOUTH WALES: Public Library of New South Wales, Sydney.
NEW ZEALAND: Dominion Museum, Wellington.
NICARAGUA: Ministerio de Relaciones Exteriores, Managua.
NORWAY: Universitets-Bibliotek, Oslo.
PANAMA: Secretaría de Relaciones Exteriores, Panama.
PARAGUAY: Sección Canje Internacional de Publicaciones del Ministerio de Relaciones Exteriores, Estrella 563, Asuncion.
PERU: Oficina de Reparto, Depósito y Canje Internacional de Publicaciones, Ministerio de Fomento, Lima.
POLAND: Service Polonais des Echanges Internationaux, Bibliothèque du Ministère des Affaires Étrangères, Warsaw.
PORTUGAL: Secção de Trocas Internacionaes, Bibliotheca Nacional, Lisbon.
QUEENSLAND: Bureau of Exchanges of International Publications, Chief Secretary's Department, Brisbane.
ROUMANIA: Bureau des Echanges Internationaux, Institut Meteorologique Central, Bukharest.
RUSSIA: Academy of Sciences, Leningrad.
SALVADOR: Ministerio de Relaciones Exteriores, San Salvador.
SIAM: Department of Foreign Affairs, Bangkok.
SOUTH AUSTRALIA: Public Library of South Australia, Adelaide.
SPAIN: Servicio del Cambio Internacional de Publicaciones, Cuerpo Facultativo de Archiveros, Bibliotecarios y Arqueólogos, Madrid.
SUMATRA, *via* Netherlands.
SWEDEN: Kongliga Svenska Vetenskaps Akademien, Stockholm.
SWITZERLAND: Service Suisse des Échanges Internationaux, Bibliothèque Centrale Fédérale, Berne.
SYRIA: American University of Beirut.
TASMANIA: Secretary to the Premier, Hobart.
TRINIDAD: Royal Victoria Institute of Trinidad and Tobago, Port-of-Spain.
TUNIS, *via* France.
TURKEY: Robert College, Constantinople.
UNION OF SOUTH AFRICA: Government Printing Works, Pretoria, Transvaal.
URUGUAY: Oficina de Canje Internacional de Publicaciones, Montevideo.
VENEZUELA: Biblioteca Nacional, Carácas.
VICTORIA: Public Library of Victoria, Melbourne.
WESTERN AUSTRALIA: Public Library of Western Australia, Perth.
YUGOSLAVIA: Académie Royale Serbe des Sciences et des Arts, Belgrade.

COMMITTEE OF EXPERTS ON THE INTERNATIONAL EXCHANGE OF PUBLICATIONS, GENEVA, SWITZERLAND

The committee on intellectual cooperation of the League of Nations called together at Geneva July 17–19, 1924, a committee of experts on the international exchange of publications, of which Prof. O. de Halecki, of the University of Warsaw, was made chairman. Mr. H. W. Dorsey, chief clerk of the Institution, who has been closely in touch with the exchange service for many years, was sent as the Smithsonian representative. The other members of the committee were Mr. J. Luchaire, Inspector General of Public Education of France; Mr. E. Bacha, Director of the Belgian Service of International Exchanges; Mr. V. Benedetti, Director of the Italian Service of International Exchanges; Mr. B. M. Headicar, Librarian of the London School of Economics and Political Science.

The above committee, without making any change in the Brussels convention of 1886, recommended an additional protocol, enabling the states that are not yet parties to the convention to adhere thereto with reservations. The resolutions of the committee of experts regarding this matter are as follows:

The states which have not yet adhered to the convention of 1886 and might consider the obligation carried in Article II as too burdensome, either on account of the very great number of their official publications or on account of their financial condition, or on any other ground, may accept the convention with the reservation that they would agree with each nation as to the number of publications to be sent. The exchange of those states with states that have unreservedly adhered to the convention would be governed by the same principle.

The Belgian Government is asked kindly to make a text of the foregoing resolution known to the states parties to the convention of March 15, 1886. These states will at the same time be informed that partial adhesions that may occur under this resolution would be made known to them by the same Government as fast as they took place, the said adhesions becoming compulsory only as between the said parties that accepted them and the adhering states.

All applications for partial adhesion would be made known to the Belgian Government and notified by that Government to every one of the states parties to the convention of 1886, including those who shall have been allowed to give partial adhesion to that treaty, each one of the States being at the same time requested to advise the said Government within one year after the date of such notification whether, so far as it is concerned, it has accepted the partial adhesion. Any state which shall not have notified its acceptance within that time shall be considered as refusing to accept the adhesion.

These resolutions were brought to the attention of this Government by the Belgian Government. The Department of State referred the matter to the Smithsonian Institution, which replied that it saw

no objection to the assent of this Government to the principle of limited adhesions to the exchange convention of 1886. It was pointed out, however, that as the principle of partial exchange of official documents has been adopted by the United States Government, the proposed reservations to the convention would not materially affect the exchange conditions now existing between the United States and other countries.

The committee of experts considered not only the possibility of improving the exchange of official documents as referred to above, but also the best way of encouraging the exchange of scientific and literary works. The committee's recommendations are embodied in the following extract from a draft convention:

ARTICLE I. Independently of the obligations which might result for each of them from the previous conventions relative to the exchange of publications, the high contracting parties undertake to exchange, as fast as they are published, at least one copy—

(*a*) All the current repertories of national bibliography of a general character.

(*b*) As far as possible documents of every kind giving information on the recent acquisitions of their scientific libraries.

ART. II. Each contracting State agrees to take all measures which it judges desirable—

(*a*) In order to make easily accessible to all interested parties the lists communicated to it according to Article I.

(*b*) In order to secure favorable consideration of all the proposals of exchange which might be addressed to it by all the contracting States with regard to scientific or literary publications included in the above-mentioned lists.

ART. III. To facilitate generally the exchange of works which are the most important or most representative of the various types of national culture, the high contracting parties shall collect or catalogue the publications received by gift or otherwise which are available for international exchange. They will publish from time to time a list of these works.

This list will also give the names of works existing in duplicate in libraries, which may be exchanged.

ART. IV. The high contracting parties undertake to encourage in every way the multiplication of exchanges of scientific and literary publications, whether State-subsidized or not, between academies and learned societies, universities, and scientific institutions, as laid down in Article VII of the Convention of 1886.

ART. V. The high contracting parties undertake to publish annual reports on the work of their exchange services. These reports shall be transmitted to the committee on intellectual cooperation, which shall publish extracts therefrom, together with a general report on the work of the international exchanges during the period in question.

The text of the above draft convention was brought to the attention of this Government by the secretary general of the League of Nations with the request that consideration be given to the feasi-

bility of agreeing to it. The State Department referred the matter to the Institution, which replied in part as follows:

While it is realized that the articles in the proposed new convention would greatly facilitate the dissemination and interchange of published information among the various countries, it is also realized that it would be impossible to carry out their stipulations even partially without the expenditure of a considerable sum of money annually. So far as the Smithsonian Institution is concerned, it would be impossible to do so without a large increase in the appropriation made to it for the support of the International Exchange Service.

The Smithsonian Institution is, therefore, not in a position to carry out even partially the terms proposed in the new convention unless adequate additional funds were appropriated for the purpose. The Institution has, however, always done everything in its power to promote this subject since it inaugurated a system of international exchange in 1850, and believes that it might be well for this country to consider again at a later and more favorable time the question of adhering to the proposed convention.

The committee of experts also gave consideration to various other matters looking to the improvement of the international exchange service at large and the extension of its activities.

Respectfully submitted.

C. G. Abbot,
Assistant Secretary, in charge of Library and Exchanges.

Dr. Charles D. Walcott,
Secretary, Smithsonian Institution.

APPENDIX 6

REPORT ON THE NATIONAL ZOOLOGICAL PARK

SIR: I have the honor to submit the following report on the operations of the National Zoological Park for the fiscal year ending June 30, 1925.

Mr. N. Hollister, superintendent of the park since 1916, died on November 3, 1924, and was succeeded by Dr. Alexander Wetmore, who served until April 1, 1925. On that date Doctor Wetmore was appointed an assistant secretary of the Smithsonian Institution, and the writer was honored by appointment as superintendent of the park on May 13, 1925.

The appropriation made by Congress for the regular maintenance of the park was $148,237. From the printing and binding appropriation of the Smithsonian Institution, $300 was allotted to the National Zoological Park. A special appropriation of $3,250 was made by Congress for laying a water main and installing two fire hydrants in the park. This sum proved to be inadequate, and it was necessary to allot money from the regular maintenance fund of the park to complete the work.

As regards the collection, the year has not been a satisfactory one. Many of the specimens in the park representing major types of animals are very old and occasional deaths are beginning to thin their ranks, as has been expected, which has resulted during the past year in the loss of valuable specimens in several representative groups, thus greatly diminishing the value of the collection.

ACCESSIONS

Gifts.—One hundred and thirty animals were presented to the park or placed there on indefinite deposit during the year. Notable among these are the splendid young male chimpanzee and a pair of turacous placed on deposit by Mr. Victor J. Evans, who maintains a continual interest in the collection; a series of five valuable monkeys presented by Mr. and Mrs. E. R. Grant, of Washington, D. C.; a Bateleur eagle, an Abyssinian falcon, and two South American stone plover, by Mr. B. H. Swales; a brocket deer by Mr. P. W. Shufeldt, of Belize, British Honduras; a black bear by Mr. Fred N. Bent, of De Leon Springs, Fla.; and a large monitor lizard by Capt. Walter K. Bur-

gess, United States Army. A complete list of gifts for the year from 70 individual donors, is as follows:

Mr. E. R. Acher, Washington, D. C., Virginia opossum.

Mr. J. M. Annadale, Washington, D. C., Virginia opossum.

Mr. C. R. Aschemeier, Washington, D. C., chicken turtle, 2 gopher tortoises, and Florida snapping turtle.

Mr. M. K. Brady, Washington, D. C., Chinese, Japanese, and American tortoises and terrapins.

Mr. Vernon Bailey, Biological Survey, Washington, D. C., white-headed beach mouse and 5 grasshopper mice.

Dr. Barnhart, Washington, D. C., mockingbird.

Mr. O. E. Baynard, Plant City, Fla., Florida barred owl and bald eagle.

Mr. J. T. Benson, Nashua, N. H., Nepalese paroquet.

Mrs. L. A. Bostwick, Washington, D. C., 2 Tovi paroquets.

Capt. Walter K. Burgess, United States Army, monitor lizard.

Mr. Fred N. Burt, De Leon Springs, Fla., black bear.

Miss Helen Carlisle, Washington, D. C., brown capuchin.

Mr. H. C. Chandlee, Washington, D. C., Cuban parrot.

President Coolidge, White House, alligator.

Mrs. S. E. De Maret, Washington, D. C., canary and red, yellow, and blue macaw.

Mrs. H. O. Earle, Washington, D. C., alligator.

Mr. E. H. Ehlis, Washington, D. C., screech owl.

Mr. Will Ellis, Niagara Falls, Ontario, banded rattlesnake.

Mr. V. J. Evans, chimpanzee, 2 turacous, and 2 chukker partridges.

Mr. Charles L. Fagan, Rahway, N. J., Hungarian quail, bobolink, and Gay's finch.

Mr. Robert W. Ferguson, Boston, Mass., wild turkey.

Mrs. Robert W. Ferguson, Fernandina, Fla., 3 rattlesnakes.

Mr. E. K. Fox, Washington, D. C., black-crowned night heron.

Mr. A. G. P. Garrett, jr., Washington, D. C., raccoon.

Mrs. E. H. Gilford, Washington, D. C., Philippine macaque.

Dr. W. S. Gochenour, Bureau of Animal Industry, Department of Agriculture, Washington, D. C., 5 mallards.

Mr. E. R. Grant, Washington, D. C., mandrill, Gelada baboon, yellow baboon, and sphinx baboon.

Mrs. E. R. Grant, Washington, D. C., lesser white-nosed guenon.

Mr. Arthur Harris, Washington, D. C., ring-necked pheasant.

Mr. Thomas Harrison, Washington, D. C., alligator.

Miss Ina L. Hawes, Bureau of Entomology, Washington, D. C., horned toad.

Mr. Joseph Hayden, Washington, D. C., grass paroquet.

Mr. Owen Hockman, Washington, D. C., barred owl.

Mr. E. H. Holbrook, Maupin, Oreg., black bear.

Mrs. M. J. Holmes, Washington, D. C., blue jay.

Mr. W. F. Hopkins, Washington, D. C., painted turtle.

Mr. I. S. Horne, Kansas City, Mo., 12 prairie dogs.

Mr. Clyde Howard, Huntley, Mont., coyote.

Mr. Francis Jaffee, Washington, D. C., St. Helena waxbill.

Mr. F. N. Jarvis, Biological Survey, Washington, D. C., American barn owl and Cooper's hawk.

Mr. E. J. Jutz, Washington, D. C., Margay cat.

Miss Virginia Kalmbach, Washington, D. C., canary.

Mr. Francis S. Key, Washington, D. C., alligator.

Mr. Jerome Keyes, Alexandria, Va., spreading adder.
Mr. John M. Klein, Washington, D. C., blue-fronted parrot.
Maj. Frank G. Long, United States Army, red, yellow, and blue macaw.
Mr. Herbert Manning, Washington, D. C., alligator.
Miss Merla G. Matthews, Washington, D. C., alligator.
Mrs. J. W. McClure, Sebring, Fla., two sandhill cranes.
Miss Leila M. Milstead, Newington, Va., Virginia opossum.
Mrs. J. W. Morse, Washington, D. C., alligator.
Dr. William M. Mann, African tortoises, Reeves turtle, and blue-headed parrot.
Mrs. D. W. Padden, Fredonia, N. Y., double yellow-head parrot.
Dr. Pardoe, Bound Brook, N. J., pine snake.
Mrs. S. F. Perkins, Washington, D. C., two snapping turtles and two painted turtles.
Mr. E. L. Phillips, Washington, D. C., alligator.
Mr. J. H. Pilling, Falls Church, Va., brown capuchin.
Mrs. R. H. Quinn, Washington, D. C., common rabbit.
Mr. E. D. Reid, United States National Museum, Washington, D. C., pilot black snake.
Mr. H. W. Richards, Takoma Park, Md., two screech owls.
Mr. J. T. Russell, Washington, D. C., Petz paroquet.
Mr. L. B. Robertson, Clarendon, Va., Bonnet monkey.
Mr. John B. Shepard, Albany, N. Y., muskrat.
Mr. R. C. Shannon, United States National Museum, Washington, D. C., copperhead snake.
Mr. P. W. Shufeldt, Belize, B. H., brocket.
Mr. Carl H. Smith, Washington, D. C., orange-winged paroquet.
Dr. T. E. Snyder, Bureau of Entomology, Washington, D. C., spreading adder.
Mr. B. H. Swales, Washington, D. C., South American stone plover; pigmy falcon, and Bateleur eagle.
Mr. J. E. Tyler, Washington, D. C., canary.
Mrs. R. C. Wilton, Washington, D. C., yellow and blue macaw.
Mr. H. A. Wrenn, Baltimore, Md., albino squirrel.

Births.—During the year 74 birds and mammals, hatched or born at the park, were added to the collection. Among the mammals were: Manchurian tiger, 3; plains wolf, 3; coyote, 5; European brown bear, 4; Rocky Mountain sheep, 3; mouflon, 1; tahr, 2; American bison, 3; yak, 1; Indian buffalo, 1; black buck, 1; American elk, 1; red deer, 4; Barasingha deer, 1; Japanese deer, 4; fallow deer, 3; hippopotamus, 1; grasshopper mouse, 5; rhesus monkey, 1; Javan macaque, 1; Japanese macaque, 1; flying phalanger, 1; great red kangaroo, 3; rufous-bellied wallaby, 1; brush-tailed rock wallaby, 1.

The park was again fortunate in raising two blue geese (*Chen cærulescens*). Other birds hatched were as follows: Mute swan, black duck, peafowl, silver gull, and black-crowned night heron.

Purchases, exchanges, and transfers.—Only 91 specimens were purchased during the year. Of these special mention should be made of a De Brazza's guenon, a serval, a pair of viscachas, an Arabian gazelle, a llama, and a male gemsbok. The last named is a magnificent specimen, the second of its kind to be received at the park.

A small number of animals were received in exchange for surplus stock from the collection.

The Biological Survey, United States Department of Agriculture, transferred a number of animals taken by field agents of the bureau, including some large western ravens, western porcupines, two sandhill cranes, and two whistling swans.

Deposits.—Among the animals received on deposit, which represented species not exhibited in the collection, were a sarus crane, a jabiru stork, and a pair of adjutants, deposited for a time by Mr. Victor J. Evans. Of species placed on deposit which were new to the park records, a lesser white-nosed guenon is especially notable.

REMOVALS

Forty-one birds and mammals were sent away in exchange to other zoological gardens during the year. Among these were two elk, an Indian buffalo, two American bison, six red deer, four Japanese deer, and a llama.

Nine animals and birds on deposit were returned to their owners.

The average mortality among the animals remains low, despite numerous losses during the year, chiefly among aged animals, long on exhibition. These losses, however, have been very serious, as they include a bull eland that had lived in the park since 1916, a Grant zebra received in 1909, a Rocky Mountain sheep ram received in 1917, Barbados sheep, a reindeer, a wart hog, two lions, a male Axis deer, an African leopard that had lived in the park since 1909, and an African rhinoceros that had been in the collection only 18 months. Most of these animals were the only representatives of their species in the collection, and their loss creates gaps that can be filled only by purchases involving expenditures of far more money than is available.

Losses among reptiles are so heavy unless adequate arrangements are made for their care, that it is useless to attempt to maintain a collection in this group, except of a few hardy types, until proper quarters are provided for them.

Post-mortem examinations of animals that died were made, when desired, by the pathological division of the Bureau of Animal Industry.

The following list shows the results of autopsies, the causes being arranged by groups:

MAMMALS

Marsupialia: Pneumonia, 3; pleurisy and pericarditis, 1; gastroenteritis, 1; necrobacillosis, 3; no cause found, 1.

Carnivora: Chronic nephritis, 1; internal hemorrhage, 1; cystic goitre, 1; no cause found, 1.

Rodentia: Pneumonia, 1; necrosis of jaw, 1; no cause found, 1.

Edentata: Congestion of lungs, 1; no cause found, 1.

Primates: Congestion of lungs, 1; icterus, 1; metritis, 1; cystic tumor, 1; ankylosis, 1; cage paralysis, 1.

Artiodactyla: Pneumonia, 3; enteritis, 2; gastroenteritis, 1; acute indigestion, 1; impaction of rumen, 2; old age, 6; accident, 1; difficult parturition, 1.

Perissodactyla: Round worm infestation, 1; volvulus of large intestine, 1.

Proboscidea: Malignant tumor, 1.

Insectivora: Gastroenteritis, 1.

BIRDS

Ciconiiformes: Impaction of crop, 1; accident, 1; no cause found, 2.

Anseriformes: Tuberculosis, 2; gastroenteritis, 1; visceral gout, 1; verminous obstipation, 1; no cause found, 5.

Falconiformes: Accident, 1.

Galliformes: Accident, 1.

Gruiformes: Accident, 1.

Charadriiformes: Enteritis, 1; visceral gout, 1.

Psittaciformes: Tuberculosis, 2; coccidiosis, 1.

Coraciiformes: Tuberculosis, 1; volvulus of large intestine, 1.

Passeriformes: Syncope, 1; tapeworm infestation, 1; no cause found, 1.

ANIMALS IN THE COLLECTION, JUNE 30, 1925

MAMMALS

MARSUPIALIA

Allen's opossum (*Metachirops opossum fuscogriseus*)	1
Virginia opossum (*Didelphis virginia*)	10
Tasmanian devil (*Sarcophilus harrisii*)	2
Australian opossum (*Trichosurus vulpecula*)	1
Flying phalanger (*Petaurus breviceps*)	7
Brush-tailed rock wallaby (*Petrogale penicillata*)	3
Rufous-bellied wallaby (*Macropus billardierii*)	3
Wallaroo (*Macropus robustus*)	1
Great gray kangaroo (*Macropus giganteus*)	2
Red kangaroo (*Macropus rufus*)	6
Wombat (*Phascolomys mitchelli*)	1

CARNIVORA

Kadiak bear (*Ursus middendorffi*)	2
Alaska Peninsula bear (*Ursus gyas*)	4
Yakutat bear (*Ursus dalli*)	1
Kidder's bear (*Ursus kidderi*)	2
European bear (*Ursus arctos*)	6
Grizzly bear (*Ursus horribilis*)	1
Apache grizzly (*Ursus apache*)	1
Himalayan bear (*Ursus thibetanus*)	1
Black bear (*Ursus americanus*)	4
Cinnamon bear (*Ursus americanus cinnamomum*)	2
Glacier bear (*Ursus emmonsii*)	1
Sloth bear (*Melursus ursinus*)	1
Sun bear (*Helarctos malayanus*)	1
Polar bear (*Thalarctos maritimus*)	2
Dingo (*Canis dingo*)	3
Gray wolf (*Canis nubilus*)	7
Timber wolf (*Canis occidentalis*)	1
Florida wolf (*Canis floridanus*)	1
Texas red wolf (*Canis rufus*)	1
Coyote (*Canis latrans*)	7
Hybrid coyote (*Canis latrans-rufus*)	1
California coyote (*Canis ochropus*)	1
Black-backed jackal (*Canis mesomelas*)	1
Red fox (*Vulpes fulva*)	4
European fox (*Vulpes vulpes*)	1
Kit fox (*Vulpes velox*)	2
Gray fox (*Urocyon cinereoargenteus*)	2
Bush dog (*Icticyon venaticus*)	1
Cacomistle (*Bassariscus astutus*)	2
Panda (*Ailurus fulgens*)	1
Raccoon (*Procyon lotor*)	7
Florida racoon (*Procyon lotor elucus*)	2
Gray coatimundi (*Nasua narica*)	2
Kinkajou (*Potos flavus*)	3
Mexican kinkajou (*Potos flavus azteeus*)	1
American badger (*Taxidea taxus*)	2
Florida otter (*Lutra canadensis vaga*)	3
Black-footed ferret (*Mustela nigripes*)	1
Palm civet (*Paradoxurus hermaphroditus*)	2

Aard-wolf (*Proteles cristatus*)	1
Spotted hyena (*Crocuta crocuta*)	1
Striped hyena (*Hyæna hyæna*)	1
African cheetah (*Acinonyx jubatus*)	2
Lion (*Felis leo*)	5
Bengal tiger (*Felis tigris*)	1
Manchurian tiger (*Felis tigris longipilis*)	5
Leopard (*Felis pardus*)	1
Jaguar (*Felis onca*)	1
Serval (*Felis serval*)	1
Brazilian ocelot (*Felis pardalis brasiliensis*)	1
Snow leopard (*Felis uncia*)	1
Mexican puma (*Felis azteca*)	4
Mountain lion (*Felis hippolestes*)	1
Canada lynx (*Lynx canadensis*)	1
Northern wild cat (*Lynx uinta*)	1
Bay lynx (*Lynx rufus*)	2
Clouded leopard (*Neofelis nebulosa*)	1

PINNIPEDIA

California sea lion (*Zalophus californianus*)	2
San Geronimo harbor seal (*Phoca richardii geronimensis*)	1

RODENTIA

Woodchuck (*Marmota monax*)	3
Prairie dog (*Cynomys ludovicianus*)	36
European squirrel (*Sciurus vulgaris*)	4
Prevost's squirrel (*Sciurus prevosti*)	1
Honduras squirrel (*sciurus boothiæ*)	1
Albino squirrel (*Sciurus carolinensis*)	3
Bailey's pocket mouse (*Perognathus baileyi*)	1
White-headed beach mouse (*Peromyscus leucocephalus*)	1
American beaver (*Castor canadensis*)	5
Grasshopper mouse (*Onychomys leucogaster*)	10
African porcupine (*Hystrix africæaustralis*)	1
Malay porcupine (*Acanthion brachyurum*)	2
Tree porcupine (*Coendou prehensilis*)	1
Western porcupine (*Erethizon epixanthum*)	1
Viscacha (*Lagostomus trichodactylus*)	2
Central American paca (*Cuniculus paca virgatus*)	3
Sooty agouti (*Dasyprocta fuliginosa*)	1
Speckled agouti (*Dasyprocta punctata*)	2
Azara's agouti (*Dasyprocta azaræ*)	1
Trinidad agouti (*Dasyprocta rubrata*)	5
Yellow-rumped agouti (*Dasyprocta lucifer cayennæ*)	1
Guinea pig (*Cavia porcellus*)	10
Capybara (*Hydrochærus hydrochæris*)	2

LAGOMORPHA

Domestic rabbit (*Oryctolagus cuniculus*)	10

INSECTIVORA

European hedgehog (*Erinaceus europæus*)	5

PRIMATES

Ring-tailed lemur (*Lemur catta*)	1
Red-fronted lemur (*Lemur ruffrons*)	1
Gray spider monkey (*Ateles geoffroyi*)	2
Mexican spider monkey (*Ateles neglectus*)	1
White-throated capuchin (*Cebus capucinus*)	4
Weeping capuchin (*Cebus apella*)	1
Brown capuchin (*Cebus fatuellus*)	3
Gelada baboon (*Theropithecus obscurus*)	1
Chacma (*Papio porcarius*)	1
Anubis baboon (*Papio cynocephalus*)	1
East African baboon (*Papio ibeanus*)	1
Arabian baboon (*Papio hamadryas*)	2
Mandrill (*Papio sphinx*)	2
Drill (*Papio leucophæus*)	1
Moor macaque (*Cynopithecus maurus*)	2
Barbary ape (*Simia sylvanus*)	2
Japanese macaque (*Macaca fuscata*)	3
Pig-tailed monkey (*Macaca nemestrina*)	1
Burmese macaque (*Macaca andamanensis*)	1
Rhesus monkey (*Macaca rhesus*)	18
Bonnet monkey (*Macaca sinica*)	1
Philippine macaque (*Macaca syrichta*)	1
Javan macaque (*Macaca mordax*)	6
Black mangabey (*Cercocebus aterrimus*)	1
Sooty mangabey (*Cercocebus fuliginosus*)	2
Hagenbeck's mangabey (*Cercocebus hagenbecki*)	1
White-collared mangabey (*Cercocebus torquatus*)	1
Green guenon (*Lasiopyga callitrichus*)	2
Vervet guenon (*Lasiopyga pygerythra*)	1
Mona guenon (*Lasiopyga mona*)	3
De Brazza's guenon (*Lasiopyga brazzæ*)	1
Lesser white-nosed guenon (*Lasiopyga petaurista*)	1
Chimpanzee (*Pan satyrus*)	2

ARTIODACTYLA

Wild boar (*Sus scrofa*)	1
Collared peccary (*Pecari angulatus*)	2
Hippopotamus (*Hippopotamus amphibius*)	3
Bactrian camel (*Camelus bactrianus*)	2
Arabian camel (*Camelus dromedarius*)	1
Guanaco (*Lama guanicoe*)	3
Llama (*Lama glama*)	6
Reindeer (*Rangifer tarandus*)	5
Fallow deer (*Dama dama*)	9
Axis deer (*Axis axis*)	2
Hog deer (*Hyelaphus porcinus*)	3
Sambar (*Rusa unicolor*)	2
Barasingha (*Rucervus duvaucelii*)	6
Burmese deer (*Rucervus eldii*)	1
Japanese deer (*Sika nippon*)	12
Red deer (*Cervus elaphus*)	13
Kashmir deer (*Cervus hanglu*)	2
Bedford deer (*Cervus xanthopygus*)	5
American elk (*Cervus canadensis*)	4

Virginia deer (*Odocoileus virginianus*)	1
Brocket (*Mazama sartorii*)	1
Blesbok (*Damaliscus albifrons*)	2
White-tailed gnu (*Connochætes gnou*)	1
Brindled gnu (*Connochætes taurinus*)	1
Lechwe (*Onotragus leche*)	1
Sable antelope (*Egoceras niger*)	1
Indian antelope (*Antilope cervicapra*)	4
Arabian gazelle (*Gazella arabica*)	1
Nilgai (*Boselaphus tragocamelus*)	2
Gemsbok (*Oryx gazella*)	1
East African eland (*Taurotragus oryx livingstonii*)	1
Mountain goat (*Oreamnos americanus*)	5
Tahr (*Hemitragus jemlahicus*)	8
Alpine ibex (*Capra ibex*)	2
Sheep (*Ovis ovis*)	1
Aoudad (*Ammotragus lervia*)	1
Rocky Mountain sheep (*Ovis canadensis*)	7
Arizona mountain sheep (*Ovis canadensis gaillardi*)	1
Mouflon (*Ovis musimon*)	4
Greenland musk-ox (*Ovibos moschatus wardi*)	2
Zebu (*Bos indicus*)	1
Yak (*Poëphagus grunniens*)	5
American bison (*Bison bison*)	15
Indian buffalo (*Bubalus bubalis*)	3

PERISSODACTYLA

Malay tapir (*Tapirus indicus*)	1
Brazilian tapir (*Tapirus terrestris*)	1
Baird's tapir (*Tapirella bairdii*)	1
Grevy's zebra (*Equus grevyi*)	1
Zebra-horse hybrid (*Equus grevyi-caballus*)	1
Zebra-ass hybrid (*Equus grevyi-asinus*)	1

PROBOSCIDEA

Abyssinian elephant (*Loxodonta africana oxyotis*)	1
Sumatran elephant (*Elephas sumatranus*)	1

BIRDS

RATITÆ

South African ostrich (*Struthio australis*)	5
Somaliland ostrich (*Struthio molybdophanes*)	2
Nubian ostrich (*Struthio camelus*)	1
Rhea (*Rhea americana*)	1
Sclater's cassowary (*Casuarius philipi*)	1
Emu (*Dromiceius novæhollandiæ*)	2
Kiwi (*Apteryx mantelli*)	1

CICONIIFORMES

American white pelican (*Pelecanus erythrorhynchos*)	7
European white pelican (*Pelecanus onocrotalus*)	2
Roseate pelican (*Pelecanus roseus*)	2
Australian pelican (*Pelecanus conspicillatus*)	2
Brown pelican (*Pelecanus occidentalis*)	9
California brown pelican (*Pelecanus californicus*)	5
Florida cormorant (*Phalacrocorax auritus floridanus*)	3
Great white heron (*Ardea occidentalis*)	2
Great blue heron (*Ardea herodias*)	1
Goliath heron (*Ardea goliath*)	1
American egret (*Casmerodius egretta*)	2
Black-crowned night heron (*Nycticorax nycticorax nævius*)	32
White stork (*Ciconia ciconia*)	1
Black stork (*Ciconia nigra*)	1
Marabou stork (*Leptoptilus crumeniferus*)	2
Indian jabiru (*Xenorhynchus asiaticus*)	1
Wood ibis (*Mycteria americana*)	4
Straw-necked ibis (*Carphibis spinicollis*)	1
Sacred ibis (*Threskiornis æthiopicus*)	2
Black-headed ibis (*Threskiornis melanocephalus*)	3
Australian ibis (*Threskiornis strictipennis*)	4
White ibis (*Guara alba*)	10
Scarlet ibis (*Guara rubra*)	4
European flamingo (*Phœnicopterus roseus*)	4

ANSERIFORMES

Mallard (*Anas platyrhynchos*)	9
Black duck (*Anas rubripes*)	8
Australian black duck (*Anas superciliosa*)	1
Gadwall (*Chaulelasmus streperus*)	1
Falcated duck (*Eunetta falcata*)	1
European widgeon (*Mareca penelope*)	3
Baldpate (*Mareca americana*)	8
Green-winged teal (*Nettion carolinense*)	11
European teal (*Nettion crecca*)	4
Baikal teal (*Nettion formosum*)	6
Blue-winged teal (*Querquedula discors*)	1
Garganey (*Querquedula querquedula*)	6
Shoveller (*Spatula clypeata*)	4
Pintail (*Dafila acuta*)	16
Bahaman pintail (*Poecilonetta bahamensis*)	1
Wood duck (*Aix sponsa*)	10
Mandarin duck (*Dendronessa galericulata*)	12
Canvasback (*Marila valisineria*)	9

European pochard (*Marila ferina*) 3
Redhead (*Marila americana*) 11
Ring-necked duck (*Marila collaris*) 2
Tufted duck (*Marila fuligula*) 1
Lesser scaup duck (*Marila affinis*) 3
Greater scaup duck (*Marila marila*) 9
Rosy-billed pochard (*Metopiana peposaca*) 4
Egyptian goose (*Chenalopex ægyptiacus*) 3
Upland goose (*Chloephaga leucoptera*) 1
Hawaiian goose (*Nesochen sandvicensis*) 2
Snow goose (*Chen hyperborcus*) 1
Greater snow goose (*Chen hyperboreus nivalis*) 2
Blue goose (*Chen cærulescens*) 5
White-fronted goose (*Anser albifrons*) 2
American white-fronted goose (*Anser albifrons gambeli*) 3
Bean goose (*Anser fabalis*) 2
Pink-footed goose (*Anser brachyrhynchus*) 2
Bar-headed goose (*Eulabia indica*) 2
Canada goose (*Branta canadensis*) 8
Hutchins's goose (*Branta canadensis hutchinsii*) 6
White-cheeked goose (*Branta canadensis occidentalis*) 12
Cackling goose (*Branta canadensis minima*) 2
Brant (*Branta bernicla glaucogastra*) 8
Barnacle goose (*Branta leucopsis*) 5
Spur-winged goose (*Plectropterus gambensis*) 1
Muscovy duck (*Cairina moschata*) 1
Pied goose (*Anseranas semipalmata*) 2
Black-bellied tree duck (*Dendrocygna autumnalis*) 5
Eyton's tree duck (*Dendrocygna eytoni*) 4
Mute swan (*Cygnus gibbus*) 4
Trumpeter swan (*Olor buccinator*) 1
Black swan (*Chenopis atrata*) 2

FALCONIFORMES

California condor (*Gymnogyps californianus*) 3
Turkey vulture (*Cathartes aura*) 3
Black vulture (*Coragyps urubu*) 1
King vulture (*Sarcoramphus papa*) 2
Secretary bird (*Sagittarius serpentarius*) 1
Griffon vulture (*Gyps fulvus*) 1
African black vulture (*Torgos tracheliotus*) 1
Cinereous vulture (*Ægypius monachus*) 2
Caracara (*Polyborus cheriway*) 4
Wedge-tailed eagle (*Uroaëtus audax*) 2
Golden eagle (*Aquila chrysaëtos*) 5
White-bellied sea eagle (*Cuncuma leucogaster*) 2
Bald eagle (*Haliæetus leucocephalus*) 10
Alaskan bald eagle (*Haliæetus leucocephalus alascanus*) 2
Bateleur eagle (*Helotarsus ecaudatus*) 1
Broad-winged hawk (*Buteo platypterus*) 1
Red-tailed hawk (*Buteo borealis*) 7
Pigmy falcon (*Poliohierax semitorquatus*) 1
Sparrow hawk (*Falco sparverius*) 4

GALLIFORMES

Razor-billed curassow (*Mitu mitu*) 4
Penelope (*Penelope boliviana*) 1
Wild turkey (*Meleagris gallopavo silvestris*) 1
Vulturine guinea fowl (*Acryllium vulturinum*) 2
Peafowl (*Pavo cristatus*) 18
Peacock pheasant (*Polyplectron bicalcaratum*) 1
Silver pheasant (*Gennæus nycthemerus*) 2
Lady Amherst's pheasant (*Chrysolophus amherstiæ*) 1
Ring-necked pheasant (*Phasianus torquatus*) 10
European quail (*Coturnix coturnix*) 3
Hungarian quail (*Perdix perdix*) 1
Gambel's quail (*Lophortyx gambelii*) 1
Valley quail (*Lophortyx californica vallicola*) 1
Chukar partridge (*Caccabis chukar*) 2
Scaled quail (*Callipepla squamata*) 5
Massena quail (*Cyrtonyx montezumæ*) 1

GRUIFORMES

East Indian gallinule (*Porphyrio calvus*) 2
Pukeko (*Porphyrio stanleyi*) 1
Black-tailed moor hen (*Microtribonyx ventralis*) 2
American coot (*Fulica americana*) 1
South Island weka rail (*Ocydromus australis*) 3
Short-winged weka (*Ocydromus brachypterus*) 2
Sandhill crane (*Grus mexicana*) 3
Little brown crane (*Grus canadensis*) 4
Sarus crane (*Grus collaris*) 1
White-necked crane (*Grus leucauchen*) 1
Indian white crane (*Grus leucogeranus*) 1
Lilford's crane (*Grus lilfordi*) 2
Australian crane (*Grus rubicunda*) 2
Demoiselle crane (*Anthropoides virgo*) 6
Crowned crane (*Balcarica pavonina*) 1
Kagu (*Rhynochetos jubatus*) 2

CHARADRIIFORMES

Ruff (*Philomachus pugnax*) 4
Lapwing (*Vanellus vanellus*) 1
Yellow-wattled lapwing (*Lobivanellus indicus*) 1
South American stone plover (*Œdicnemus bistriatus vocifer*) 2

Pacific gull (*Gabianus pacificus*) 1
Great black-backed gull (*Larus marinus*) 4
Herring gull (*Larus argentatus*) 3
Silver gull (*Larus novæhollandiæ*) 21
Laughing gull (*Larus atricilla*) 2
Crowned pigeon (*Goura coronata*) 3
Victoria crowned pigeon (*Goura victoria*) 1
Australian crested pigeon (*Ocyphaps lophotes*) 3
Bronze-wing pigeon (*Phaps chalcoptera*) 2
Marquesan dove (*Gallicolumba rubescens*) 7
Bleeding-heart dove (*Gallicolumba luzonica*) 2
Wood pigeon (*Columba palumbus*) 7
Mourning dove (*Zenaidura macroura*) 1
White-fronted dove (*Leptotila fulviventris brachyptera*) 4
Ruddy quail-dove (*Oreopeleia montana*) 1
Necklaced dove (*Spilopelia tigrina*) 4
Zebra dove (*Geopelia striata*) 3
Bar-shouldered dove (*Geopelia humeralis*) 1
Inca dove (*Scardafella inca*) 1
Cuban ground dove (*Chæmepelia passerina aflavida*) 1
Green-winged dove (*Chalcophaps indica*) 1
Ringed turtledove (*Streptopelia risoria*) 3
Fruit pigeon (*Lamprotreron superba*) 1

PSITTACIFORMES

Kea (*Nestor notabilis*) 3
Musk lorikeet (*Glossopsitta concinna*) 1
Cockateel (*Calopsitta novæhollandiæ*) 2
Roseate cockatoo (*Kakatoe roseicapilla*) 15
Bare-eyed cockatoo (*Kakatoe gymnopis*) 1
Leadbeater's cockatoo (*Kakatoe leadbeateri*) 2
Philippine cockatoo (*Kakatoe hæmaturopygia*) 1
White cockatoo (*Kakatoe alba*) 1
Sulphur-crested cockatoo (*Kakatoe galerita*) 9
Great red-crested cockatoo (*Kakatoe moluccensis*) 1
Cassin's macaw (*Ara auricollis*) 1
Mexican green macaw (*Ara mexicana*) 2
Severe macaw (*Ara severa*) 1
Blue-and-yellow macaw (*Ara ararauna*) 7
Red-and-blue-and-yellow macaw (*Ara macao*) 7
Hahn's macaw (*Diopsittaca hahni*) 1
White-eyed paroquet (*Aratinga leucophthalmus*) 1
Petz's paroquet (*Eupsittula canicularis*) 6
Golden-crowned paroquet (*Eupsittula aurea*) 3
Weddell's paroquet (*Eupsittula weddellii*) 3
Blue-winged parrotlet (*Psittacula passerina*) 14
Golden paroquet (*Brotogeris chrysosema*) 2
Tovi paroquet (*Brotogeris jugularis*) 7
Orange-winged paroquet (*Brotogeris chiriri*) 3
Yellow-naped parrot (*Amazona auropalliata*) 3
Mealy parrot (*Amazona farinosa*) 2
Orange-winged parrot (*Amazona amazonica*) 5
Blue-fronted parrot (*Amazona æstiva*) 2
Red-crowned parrot (*Amazona viridigenalis*) 3
Double yellow-headed parrot (*Amazona oratrix*) 9
Yellow-headed parrot (*Amazona ochrocephala*) 4
Festive parrot (*Amazona festiva*) 3
Lesser white-fronted parrot (*Amazona albifrons nana*) 1
Santo Domingo parrot (*Amazona ventralis*) 3
Cuban parrot (*Amazona leucocephala*) 3
Maximilian's parrot (*Pionus maximiliani*) 1
Dusky parrot (*Pionus fuscus*) 2
Blue-headed parrot (*Pionus menstruus*) 2
Amazonian caique (*Pionites xanthomeria*) 5
Lesser vasa parrot (*Coracopsis nigra*) 1
Greater vasa parrot (*Coracopsis vasa*) 1
Red-faced love bird (*Agapornis pullaria*) 8
Pennant's paroquet (*Platycercus elegans*) 2
Rosella paroquet (*Platycercus eximius*) 1
Black-tailed paroquet (*Polytelis melanura*) 1
King paroquet (*Aprosmictus cyanopygius*) 1
Crimson-winged paroquet (*Aprosmictus erythropterus*) 1
Ring-necked paroquet (*Conurus torquatus*) 1
Nepalese paroquet (*Conurus nepalensis*) 1
Philippine green parrot (*Tanygnathus lucionensis*) 1
Grass paroquet (*Melopsittacus undulatus*) 16

CUCULIFORMES

Turaco, immature (*Turacus sp.*) 2

CORACIIFORMES

Giant kingfisher (*Dacelo gigas*) 1
Yellow-billed hornbill (*Lophoceros leucomelas*) 1
Morepork owl (*Spiloglaux novæzealandiæ*) 1
Barred owl (*Strix varia*) 6
Florida barred owl (*Strix varia alleni*) 1
Snowy owl (*Nyctea nyctea*) 1

Screech owl (*Otus asio*) 4
Great horned owl (*Bubo virginianus*) 7
Eagle owl (*Bubo bubo*) 1
American barn owl (*Tyto perlata pratincola*) 5

PASSERIFORMES

Cock-of-the-rock (*Rupicola rupicola*) 1
Silver-eared hill-tit (*Mesia argentauris*) 1
Red-billed hill-tit (*Liothrix luteus*) 11
Black-gorgeted laughing-thrush (*Garrulax pectoralis*) 2
White-eared bulbul (*Otocompsa leucotis*) 3
Red-eared bulbul (*Otocompsa jocosa*) 2
European blackbird (*Turdus merula*) 1
Mockingbird (*Mimus polyglottos*) 1
Piping crow-shrike (*Gymnorhina tibicen*) 2
European raven (*Corvus corax*) 1
American raven (*Corvus corax sinuatus*) 3
Australian crow (*Corvus coronoides*) 1
American crow (*Corvus brachyrhynchos*) 2
Yucatan jay (*Cissilopha yucatanica*) 1
Blue jay (*Cyanocitta cristata*) 2
Green jay (*Xanthoura luxuosa*) 3
Yellow-headed marsh bird (*Agelaius icterocephalus*) 1
Australian gray jumper (*Struthidea cinerea*) 1
Starling (*Sturnus vulgaris*) 9
Shining starling (*Lamprocorax metallicus*) 2
Laysan finch (*Telespyza cantans*) 2
Blue honey creeper (*Cyanerpes cyaneus*) 1
Blue-winged tanager (*Tanagra cyanoptera*) 1
Blue tanager (*Thraupis cana*) 1
Giant whydah (*Diatropura progne*) 3
Paradise whydah (*Steganura paradisea*) 2
Shaft-tailed whydah (*Tetrænura regia*) 1
Napoleon weaver (*Pyromelana afra*) 1
Red-billed weaver (*Quelea quelea*) 1
Bobolink (*Dolichonyx oryzivorus*) 1
Madagascar weaver (*Foudia madagascariensis*) 1
St. Helena waxbill (*Estrilda astrilda*) 4
Rosy-rumped waxbill (*Estrilda rhodopygia*) 1
Nutmeg finch (*Munia punctulata*) 3
White-headed nun (*Munia maja*) 2
Black-headed nun (*Munia atricapilla*) 5
Chestnut-breasted finch (*Munia castaneithorax*) 3
Java finch (*Munia oryzivora*) 13
Masked grassfinch (*Poëphila personata*) 5
Black-faced Gouldian finch (*Poëphila gouldiæ*) 1
Red-faced Gouldian finch (*Poëphila mirabilis*) 1
Diamond finch (*Steganopleura guttata*) 5
Zebra finch (*Tæniopygia castanotis*) 15
Cutthroat finch (*Amadina fasciata*) 9
Red-headed finch (*Amadina erythrocephala*) 2
Hooded oriole (*Icterus cucullatus*) 2
Yellow-tailed oriole (*Icterus mesomelas*) 1
Purple grackle (*Quiscalus quiscula*) 2
Greenfinch (*Chloris chloris*) 3
European goldfinch (*Carduelis carduelis*) 4
Bramble finch (*Fringilla montifringilla*) 4
Yellowhammer (*Emberiza citrinella*) 1
House finch (*Carpodacus mexicanus frontalis*) 2
San Lucas house finch (*Carpodacus mexicanus ruberrimus*) 2
Canary (*Serinus canarius*) 19
Gray singing finch (*Serinus leucopygius*) 9

REPTILES

Alligator (*Alligator mississippiensis*) 43
Water dragon (*Physignathus lesueurii*) 1
Horned toad (*Phrynosoma cornutum*) 2
Glass snake (*Ophisaurus ventralis*) 1
Gila monster (*Heloderma suspectum*) 6
Gould's monitor (*Varanus gouldii*) 1
Philippine monitor (*Varanus salvator*) 1
Blue-tongued lizard (*Tiliqua scincoides*) 1
Rock python (*Python molurus*) 2
Regal python (*Python reticulatus*) 1
Anaconda (*Eunectes murinus*) 2
Boa constrictor (*Constrictor constrictor*) 1
Black snake (*Coluber constrictor*) 2
Blue racer (*Coluber constrictor flaviventris*) 6
Coachwhip snake (*Coluber flagellum*) 2
Chicken snake (*Elaphe quadrivittata*) 1
Corn snake (*Elaphe guttata*) 2
Pilot blacksnake (*Elaphe obsoleta*) 1
Pine snake (*Pituophis melanoleucus*) 4
Bull snake (*Pituophis sayi*) 4
Western bull snake (*Pituophis catenifer*) 1
Water snake (*Natrix sipedon*) 2
Western water snake (*Natrix sipedon fasciata*) 1
Garter snake (*Thamnophis sirtalis*) 1
Florida rattlesnake (*Crotalus adamanteus*) 3
Western diamond rattlesnake (*Crotalus atrox*) 4
Snapping turtle (*Chelydra serpentina*) 5
Florida snapping turtle (*Chelydra osceola*) 1
Rossignon's snapping turtle (*Chelydra rossignonii*) 1
Musk turtle (*Kinosternon odoratum*) 1
Mexican musk turtle (*Kinosternon sonoriense*) 1

South American musk turtle (*Kinosternon scorpioides*)	5
Pennsylvania musk turtle (*Kinosternon subrubrum*)	2
Wood turtle (*Clemmys insculpta*)	1
European pond turtle (*Emys orbicularis*)	5
South American terrapin (*Nicoria punctularia*)	1
Reeves turtle (*Geoclemmys reevesi*)	1
Painted turtle (*Chrysemys picta*)	3
Cooter (*Pseudemys scripta*)	2
Central American cooter (*Pseudemys ornata*)	2
Gopher tortoise (*Gopherus polyphemus*)	2
Duncan Island tortoise (*Testudo ephippium*)	1
Indefatigable Island tortoise (*Testudo porteri*)	1
Albemarle Island tortoise (*Testudo vicina*)	2
South American tortoise (*Testudo denticulata*)	2
African tortoise (*Testudo hermanni*)	1
Long-necked turtle (*Chelodina longicollis*)	1
Chicken turtle (*Deirochelys reticularia*)	1

Statement of the collection

	Mammals	Birds	Reptiles	Total
Presented	28	54	34	116
Born and hatched in National Zoological Park	54	20		74
Received in exchange	2	12		14
Purchased	60	26	5	91
Transferred from other Government departments	1	11	1	13
Deposited	15	13	6	34
	160	136	46	342

SUMMARY

Animals on hand July 1, 1924	1,645
Accessions during the year	342
Total animals handled	1,987
Deduct loss (by death, return of animals, and exchange)	367
	1,620

Status of collection

	Species	Individuals
Mammals	178	503
Birds	285	982
Reptiles	48	135
Total	511	1,620

Compared with the previous year, a decrease in number of individuals is shown and compared with 1923, when there were 1,768 animals in the collection, a still greater decrease is noted. This is due to continued losses in the aging stock, especially among the larger forms. The number of forms represented exceeds that of last year, an increase due to judicious selection and purchase of small species offered at moderate prices.

Additional funds are urgently needed for purchase of animals to fill the steadily increasing gaps in the groups of larger mammals.

VISITORS

The attendance record as determined by count and estimate exceeded that of the previous year by 75,385. The greatest attendance for one month was 372,950, in April. The increase is highly gratifying as it indicates the keen interest of the general public in the collections.

The attendance by months was as follows:

July	240,700
August	324,000
September	232,725
October	235,000
November	179,500
December	56,630
January	37,110
February	121,550
March	248,200
April	372,950
May	269,300
June	200,600
Total for year	2,518,265

Schools, classes, and similar organizations, recorded among the visitors, number 266, with a total of 20,890 individuals.

The highest attendance for a year recorded previously was 2,444,880 in 1924.

IMPROVEMENTS

The animal warehouse, 24 by 90 feet, with a small ell for a feed room, the construction of which had been begun during the previous year, was completed and put into service before the end of 1925. This building is very useful, both as quarters for animals temporarily not on exhibition, and as a reception house for animals just arriving where they may rest before being placed on exhibition. It will also be useful during the winter in storing birds which are exhibited during the summer in the big flight cage and elsewhere, and for which there is no room in the bird house.

A double bear cage of steel, each half 12 by 16 feet, with concrete shelter, has been erected to take the place of a large wooden cage that was decayed beyond safety or justifiable repair.

The log dam of loose bowlders across Rock Creek at the head of the American water-fowl pond to maintain a flow of water into the pond, which had been repeatedly washed out by floods, was replaced by a log dam faced with bowlders. The logs used were obtained from chestnut trees in the park that had died from bark disease.

A concrete chimney was built on the restaurant. This building still needs various improvements, especially the addition of a kitchen,

as well as an inclosed room where visitors may lunch comfortably in cold weather.

The bird house required repairs, as usual. Some of the cages were in such bad condition that they had to be entirely replaced. A new floor was laid in the feed room, and various minor repairs made. The roof leaked badly and will require treatment during the coming year.

The eland house, the zebra house, the fences about these, rubbish containers, outdoor benches, various inclosure fences, and other ironwork were painted during the year.

WATER MAIN

One thousand five hundred and eighty feet of six-inch water main was laid, and two fire hydrants installed, through a special appropriation of $3,250, supplemented by funds taken from the general appropriation.

NEEDS OF THE PARK

The needs of the park for exhibition buildings is even more acute than in previous years, as there has been tremendous growth in the number of visitors and there is need for better conditions for exhibition. The most important and customary buildings required by a zoological park are: Carnivore, pachyderm, primate, antelope, small mammal, bird, and reptile houses. Of permanent structures, the National Zoological Park has a primate house, a house to contain one elephant, and one end of a carnivore house. All other buildings are old, without exception originally built as temporary makeshifts and kept together only by continual and often expensive repairs.

The building that shelters most of the birds, built 28 years ago, was then intended to house the collections for three or four years, until a suitable bird house could be constructed. This structure is dark, with walls so decayed that they will no longer hold pebble-dash, and provides entirely inadequate space for either the collection of birds or the great numbers of visitors; it is not only unfit for its present use but actually unsafe for its inmates.

There is no house for reptiles, always popular with visitors, and none for small mammals. Such reptiles and small mammals as are shown at the park are scattered about in places where it is inconvenient to care for them, and where in some instances they actually close the passages needed for visitors.

During a period of 35 years a collection of animals has been assembled in the National Zoological Park which ranks among the most notable in this country. Adequate buildings to replace the

present obsolete quarters should be provided to house properly the living animals, to maintain them in health, and to exhibit them to the more than two million visitors who come annually to view them.

FUNDS FOR THE PURCHASE OF ANIMALS

The collection at the National Zoological Park is augmented each year by various gifts, and through unusual success in the breeding and rearing of animals, the park has been able to exchange specimens with other zoological parks so that it has maintained a reasonably well-balanced collection of the living animals of the world, always lacking, however, representatives of certain important and interesting species. For instance, there has never been a giraffe at the park. There is no rhinoceros, no pigmy hippopotamus, and no Indian elephant. Such animals as these, when offered to the park can not be considered owing to the entirely inadequate fund for the purchase of animals, and opportunities are frequently lost to fill definite gaps in the collection as well as to replace species lost through death, by the purchase of most desirable animals that are offered for sale.

An increased appropriation to cover cost and transportation of animals has been requested, but it seems advisable also to repeat the suggestion made in previous reports that an animal purchase fund be inaugurated and deposited with the Smithsonian Institution.

REVENUES OF THE PARK

A zoological park itself is not expected to finance the refreshment of visitors. There are in the National Zoological Park, however, as in other parks, a refreshment stand and a restaurant which are rented to private parties. The money from these concessions, under present regulations, goes to the United States Treasury and can not be used for the park, although repairs and other costs in connection with the restaurant must be borne by the park. It is earnestly recommended that the revenues from the restaurant concession, which serves only to benefit the public, be turned into the animal fund of the park instead of into the general fund of the Treasury. Such is the established practice in other parks, municipal and otherwise, which often derive considerable funds for the purchase of animals from such concessions.

Respectfully submitted.

W. M. Mann, *Superintendent.*

Dr. Charles D. Walcott,
Secretary, Smithsonian Institution.

APPENDIX 7

REPORT ON THE ASTROPHYSICAL OBSERVATORY

SIR: The Astrophysical Observatory was conducted under the following passage of the independent offices appropriation act approved June 7, 1924:

Astrophysical Observatory: For maintenance of the Astrophysical Observatory, under the direction of the Smithsonian Institution, including assistants, purchase of necessary books and periodicals, apparatus, making necessary observations in high altitudes, repairs and alterations of buildings, and miscellaneous expenses, $21,580.

The observatory occupies a number of frame structures within an inclosure of about 16,000 square feet south of the Smithsonian administration building at Washington, a cement observing station and frame cottage for observers on a plot of 10,000 square feet leased from the Carnegie Solar Observatory on Mount Wilson, Calif., and also a solar observing station on Mount Harqua Hala, Ariz., erected in 1920 at the expense of private funds contributed by Mr. John A. Roebling, of Bernardsville, N. J.

The present value of the buildings and equipment for the Astrophysical Observatory owned by the Government is estimated at $50,000. This estimate contemplates the cost required to replace the outfit for the purposes of the investigation.

WORK OF THE YEAR

Solar variation and forecasting.—The chief object of the work at present is to secure the most exact measurements of the variation of the sun in order to provide proper data for studying the influence of solar changes on weather conditions of the United States and the whole world. Accordingly, the efforts of the staff were devoted mainly to this purpose. The Government appropriations were sufficient only to maintain the work at Washington and Arizona, and to pay salaries of two observers at the exceptionally favorable station at Montezuma, Chile. This station was established in 1918, and has been maintained ever since by private funds of the Institution, supplemented by gifts of Mr. Roebling. Owing to further support by Mr. Roebling, it has been possible to receive daily telegrams reporting the solar radiation observations in Chile and in Arizona. These arrive at Washington within 24 hours of the observations in the field.

The experimental forecasts by Mr. H. H. Clayton for the city of New York, mentioned in last year's report, were continued. For this purpose daily telegrams of the condition of the sun were sent from Washington to Mr. Clayton at Canton, Mass. These usually reached him before noon on the day after the observations were made in Chile and Arizona. Making up his New York forecasts for three, four, and five days ahead, Mr. Clayton informed the Smithsonian by letter on the same afternoon. On Friday of each week he forecast the temperature departures for the ensuing week beginning Sunday, and about the end of each month he forecast the temperature departures for the ensuing month. These weekly and monthly forecasts were also mailed in advance to the Smithsonian Institution.

We have compared Clayton's forecasts with the events, using mathematical processes of verification which are not susceptible of personal bias. A moderate degree of foreknowledge is certainly indicated, both for the specific forecasts of three, four, and five days in advance, and for the more general average forecasts of weeks and months.

On May 2, 1925, a symposium on this subject was held at the United States Weather Bureau before the American Meteorological Society. At that time, Messrs. C. G. Abbot and H. H. Clayton explained the status of the measurements of solar variation, and their applications for forecasting. Later, these papers of Abbot and Clayton, and also a paper by Mr. G. Hoxmark, on the results reached since 1922 in the application of solar variation for official forecasts in Argentina, were published as Nos. 2825, 2826, and 2827 of the Smithsonian Miscellaneous Collections.

The costs of telegraphic advices and of Mr. Clayton's computing bureau have been borne by Mr. Roebling's gifts for these purposes, as also the cost of publication of the papers just mentioned.

No public forecasts have been made or will be made under the auspices of the Smithsonian Institution. Our entire purpose in the matter is, and has always been, to make such experiments as might indicate what value, if any, would attach to the introduction of a new variable, namely, the variation of the sun, in weather forecasting. Our forecasts are made privately and only as tests of the experimental conclusions.

Unfortunately, space writers in the public prints have not understood this and have attributed to the Smithsonian Institution forecasts of weather conditions far into the future. These, in reality, have been made by several private individuals entirely unconnected with the Institution. We take no responsibility for these prognostications, as we know as yet of no sound method by which they may be made.

A compilation of all results on the solar constant of radiation, from 1918 to November, 1924, was published as No. 2518 of Smithsonian Miscellaneous Collections.

The investigations hitherto made having indicated that a higher degree of accuracy in our solar measurements is needed to supply proper data for forecasting purposes, a very great deal of attention has been given to the elimination of small sources of error in the observations and reductions of solar radiation. Already the average deviation of individual days' results between Chile and Arizona is but one-half per cent. It follows that in order to attain higher accuracy we shall be obliged to regard sources of error which formerly we supposed would always be negligible.

This has led to the designing and construction of new apparatus for use in pyrheliometry, which eliminates the employment of the observer's watch altogether. It has also required the investigation of the infra-red and ultra-violet portions of the solar spectrum, beyond the usual limits of our daily spectrum observations. Still more important, it has led to a complete revision of the methods of measuring and reducing solar energy spectra. With these new modifications in mind, a complete re-reduction of all solar radiation work since the beginning of the year 1922 has been undertaken, and occupies the whole force at Washington.

Removal of Mount Harqua Hala station.—The station at Mount Harqua Hala, Ariz., first occupied in 1920, proves to be too far to the east, so that the summer months there are unsuitable for observing, because of the atmospheric conditions which go to bring about the severe thunderstorms of Arizona. Very few days of June, July, and August have been suitable for our exacting work, and even some of the spring months have been marred by long-continued haziness. Had weather conditions there been first-rate, the observers would gladly have suffered the excessive isolation of the place, which is almost wholly cut off from relaxations, but to make such a sacrifice fruitlessly is indeed very depressing.

Accordingly, investigations have been made which have fixed on a better site, both as regards weather conditions and comfort. This is chosen on Table Mountain, within the bounds of the Los Angeles County Park, about 30 miles northeast of Mount Wilson. Lying on the edge of the Mojave Desert, at 7,500 feet elevation, the weather observations indicate very decided improvement over Harqua Hala for our purpose. Add to this the convenience of access and pleasant surroundings and we have combined there great advantages.

Mr. John A. Roebling has added to his already great gifts sufficient means to enable necessary buildings to be erected on Table Mountain, and to remove the observing outfit thence from Harqua

Hala. The supervisors of the Los Angeles County Park have cordially assisted in the transfer, giving rights of occupancy, and extending the auto road quite to the doors of the proposed observatory, without expense to the Smithsonian Institution. It is expected to occupy Table Mountain beginning about October 1, 1925. Mr. Moore's energetic efforts in the preliminary arrangements and the preparation of buildings deserve high praise.

An expedition under Doctor Abbot occupied Mount Wilson in the summer and autumn of 1924. The solar cooker was rebuilt, as far as concerned its oven, its circulatory system for hot oil, and its insulation against heat losses. The new oil system was perfectly successful in avoiding all leaks, such as always hitherto have marred the operations. Also, the introduction of a larger reservoir, and especially of "Silocel," or diatomaceous bricks, for heat insulation proved highly satisfactory. The experiment was tried of introducing forced oil circulation by means of a little steam engine operated by the heat of the reservoir. This worked well mechanically, but proved unnecessary, as no higher temperatures of the ovens were reached when forced circulation was in operation.

It was intended to use a vacuum jacket about the heater tube, but the apparatus was not received in season. Without this crowning improvement the solar cooker worked fully as well as in 1920, when its reputation was first made, despite the fact that somewhat thicker insulation of the reservoir is needed, as the cooling curve shows. When this, and also the vacuum jacket, are applied, the machine should be highly satisfactory.

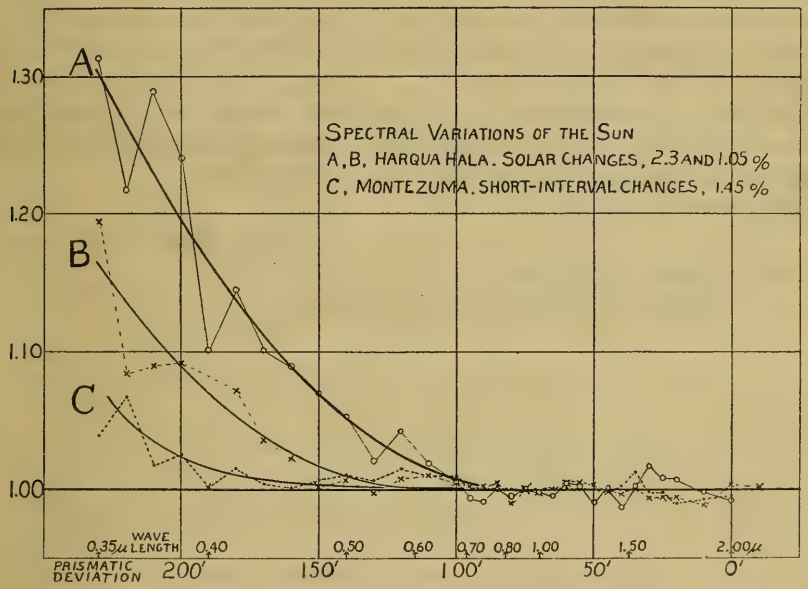
As noted in last year's report, the Fabry type of apparatus has been installed on Mount Wilson to measure the quantity of atmospheric ozone. This feeble constituent of the very high air is, we believe, very important in the economy of the earth's heat, as well as a fatal bar to observation of the most interesting part of the spectra of the sun and the hotter stars.

Having fully developed and tested the ozone outfit, photographic solar spectra of the ozone-absorption region of the ultra-violet were obtained in August, September, and October, 1925. Unfortunately the great forest fire east of Mount Wilson cut off a good many otherwise favorable days. By the generosity of Mr. Roebling a copy of the Moll spectrophotometer for measuring the plates has been procured from A. Hilger. The reductions are not yet made. Mr. Roebling's interest in this ozone research is so great that he has made a grant to enable Doctor Fabry himself to continue daily ozone measurements in France during a part of the year 1925.

The importance of studies of the variation of the sun's output of ultra-violet rays grows upon our attention. Not only the attack

on the ozone problem in that spectral region, but also the extraordinary relations of the ultra-violet rays to human, animal, and plant physiology are coming increasingly to the fore. Our own studies indicate that the solar variations are far greater for those rays than they are for the solar rays as a whole. Thus the accompanying figure indicates that when the solar constant of radiation changes by 1 per cent it means almost imperceptible change for the infra-red rays, but as much as 10 per cent or more for some rays of the ultra-violet.

In addition to the work at Mount Wilson on the solar cooker and the ozone of the higher atmosphere, much attention was paid to



Solar variation localized in the violet and ultra-violet

attempts to improve the radiometer and the stellar-spectrum apparatus, in the hope of going much further in studying the energy spectra of the stars. Much knowledge was gained which will be useful later on, and star-spectrum observations were made on several nights, but no actually completed advance in stellar spectra was attained. The way, however, is very clear now for future advance.

PERSONNEL

Mr. H. B. Freeman accepted service on the private Smithsonian roll as assistant at Harqua Hala in September, 1924, and succeeded Mr. L. B. Aldrich in charge at Montezuma on March 1, 1925. Mr. Aldrich returned to Washington.

Mr. E. E. Smith was employed on the private roll as assistant at Harqua Hala from February 9, 1925.

Mr. A. J. Ahearn assisted Doctor Abbot on Mount Wilson during the expedition of 1924.

SUMMARY

Much progress in the study of the variation of the sun and its application to weather forecasting has been made, as reported in publications Nos. 2818, 2825, 2826, and 2827 of the Smithsonian Miscellaneous Collections. Improvements in apparatus and methods designed to add to the accuracy of solar radiation measurements, and to make possible a valuable revision of existing values, are on foot. The station at Harqua Hala, having proved somewhat disappointing, is being removed to Table Mountain, in California, about 2,000 feet higher, but much more accessible. The solar cooker has been greatly improved. Measurements of atmospheric ozone are in progress. New devices were tried in stellar energy spectrum measurements and the way seems clear for great advances in that line.

Respectfully submitted.

C. G. Abbot, *Director.*

Dr. Charles D. Walcott,
Secretary, Smithsonian Institution.

APPENDIX 8

REPORT ON THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE

SIR: I have the honor to submit the following report on the operations of the United States Regional Bureau of the International Catalogue of Scientific Literature for the fiscal year ending June 30, 1925:

As has been stated in previous annual reports, actual publication of the catalogue was suspended in 1921 upon completion of the fourteenth annual issue. In conformity with an agreement reached at the International Convention held in Brussels in 1922, the work of this regional bureau, in common with others of the organization, has been continued but is confined to the collection of the data necessary to index the current scientific literature of the United States for the several years intervening between the cessation of publication and the present time. This procedure not only enables the organization to be kept intact but, when publication is resumed and the classification schedules are revised, data will be available to complete the catalogue.

It seems advisable to again outline the aim, scope, and need of the catalogue in view of the fact that the many new projects which have sprung up in minor fields, lacking harmony of purpose and cooperation of effort, have, even when taken collectively, entirely failed to supply the need of an International Catalogue of Scientific Literature.

The catalogue was started in 1901 with the aim and purpose of meeting the long-felt need of scientific investigators and librarians for an annual authors' and subject catalogue and index to the scientific literature of the world, a need felt even more to-day than in 1901. To this end, systematic classification schedules were prepared covering all recognized branches of science and each paper was not only catalogued and indexed, but also classified by means of these schedules, the result being equivalent to an analytical digest of each paper.

Financial support to enable the organization to properly function is urgent. The amount required is not great, measured in present-day terms, but is none the less essential. Between 1901 and the beginning of the war, necessary funds for publication were supplied by subscribers in the countries taking part in the enterprise. Only the actual cost of printing and publishing had to be met from these

funds as maintenance of the several regional bureaus was then, as now, provided for, in most cases, by direct governmental grants. However, the additional funds needed to meet the increased cost of printing and publishing, under war conditions, had to be met by the subscribers and these increases when expressed in the depreciated currency of many countries, resulted in impossible figures; consequently, publication had to be suspended.

When operations began in 1901, the price to subscribers of a complete set of the 17 annual volumes of the catalogue, comprising about 10,000 pages, was £17, the pound sterling being then at par. The American subscription price was, after adding shipping costs, $85. The income derived from subscriptions and the expenditures of the London Central Bureau, in charge of printing and publishing, approximately balanced in 1914, when war began. Since that time publishing costs, in England, have doubled and the value of the French franc has sunk to less than one-fourth, and the Italian lira to less than one-fifth of their respective par values. Without tabulation, it is obvious that a cost easily borne in these countries in 1901 has become impossible in 1925. It was never the intention for the International Catalogue to be a commercial enterprise, but rather the means of furnishing, at cost, to investigators and students data needed to keep them informed of the scientific progress of the world. Experience proves that international cooperation is the only means whereby the necessary data can be collected and prepared for such an index, but it is now apparent that some new source of revenue must be provided to print this data before publication can be resumed.

Could a sufficient endowment be obtained, the organization would again become self-supporting, as there is now a greater demand for the catalogue than ever before and a central bureau provided with its own publishing plant, or capital sufficient to make advantageous long-term contracts with properly equipped publishing houses, would be enabled to offset the increased cost of publication by the saving of the interest and other charges, which were necessary in 1901 to an organization doing business without capital. If it were possible to secure such an endowment in the United States, now the only country not unduly oppressed by the results of war, American students and investigators would be much benefited for, notwithstanding impoverished conditions, much advanced and valuable scientific work is being done abroad with which it is difficult to keep in touch without the annual volumes of the International Catalogue.

Respectfully submitted.

LEONARD C. GUNNELL,
Assistant in Charge.

DR. CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.

APPENDIX 9

REPORT ON THE LIBRARY

SIR: I have the honor to submit the following report on the activities of the library of the Smithsonian Institution for the fiscal year ended June 30, 1925.

CHANGES IN STAFF

During the year there were several changes in the library staff. Mr. Paul Brockett, who had been connected with the Smithsonian Institution for 38 years and had served since 1902 as its assistant librarian, resigned to devote full time to his duties as assistant secretary of the National Academy of Sciences. Mr. Brockett's successor, Mr. William L. Corbin, formerly professor of English in Boston University, assumed the position of librarian on September 15.

Mr. Newton P. Scudder, assistant librarian of the United States National Museum, retired from active service March 9, on account of age and disability, and died May 19. Mr. Scudder became connected with the Smithsonian Institution in 1882, where he remained for more than 40 years, the last 38 of which he was assistant librarian of the National Museum. Perhaps never again will the Museum library have as its reference chief a person so fully acquainted with its collections as he was, or so willing to give of his knowledge and time to those who came with questions.

Mr. Lester D. Condit, assistant in the library since 1918, was granted a furlough in October to resume his university course. He has since withdrawn from the library staff and the position was filled by the appointment of Miss Sara L. Young, a graduate of Elmira College and of Drexel Institute Library School. Miss Young has worked with scientific publications for many years, especially as cataloguer for the American Philosophical Society and the Library of Congress.

EXCHANGE OF PUBLICATIONS

The increase of the Smithsonian Library is due chiefly to the exchange of publications between the Smithsonian Institution and other learned institutions and societies of the world. Many of

these publications come to the library direct, others through the International Exchange Service, with which the library is in close cooperation. During the past year the library received 30,496 packages by mail and 2,408 through the exchange. Especially large sendings were received from Barcelona, Budapest, and Warsaw. As usual, after these packages had been opened, the items were stamped, entered, and sent to the appropriate branches of the library. The large number received was due partly to the special effort made by the periodical and correspondence divisions in noting wants and writing follow-up letters. In fact, most of the 1,181 letters sent out by the library had to do with these wants. The result was that of the 2,478 missing volumes and parts requested, 2,009 were obtained, a gain of nearly 30 per cent over last year. Exchange relations were also opened with a number of new societies.

MAIN LIBRARY

Many of the items mentioned above were, of course, forwarded day by day to the Smithsonian deposit in the Library of Congress, where they were made available to the public. The number of these was 7,287, of which there were 5,184 complete volumes, 1,421 parts of volumes, 390 pamphlets, and 292 charts. Documents of foreign governments, more or less statistical in character, to the number of 7,408, were also sent, without being stamped or entered, to the document division of the Library of Congress.

Dissertations were received from various universities at home and abroad, such as Basel, Berlin, Bern, Breslau, Copenhagen, Cornell, Dresden, Erlangen, Frankfurt a. M., Freiburg, Ghent, Giessen, Greifswald, Halle, Heidelberg, Helsingfors, Leipzig, Leyden, Lund, Marburg, Paris, Pennsylvania, Strasbourg, Tübingen, Uppsala, Utrecht, and Zürich; and from technical schools at Berlin, Delft, Karlsruhe, and Zürich.

OFFICE LIBRARY

The office library, which includes the publications of several learned societies, the aeronautical collection, the art-room collection, the employees' library, and various books, chiefly of a reference nature, in the administrative offices, was increased during the year by 312 volumes, 5 parts of volumes, and 4 pamphlets. Of these, 34 were added to the aeronautical collection.

One of the most important additions to this library was a de luxe copy of the Warner Library of the World's Best Literature, the gift of Secretary Walcott; another was Seven Log-Books Concerning the Arctic Voyages of Capt. William Scoresby, sr., of Whitby, England, presented by the Explorers Club of New York.

The circulation of the library was 2,359, of which 1,956 were magazines borrowed from the reading room. Many more volumes and periodicals were consulted in the reference room. The books most in demand were the transactions of the learned societies, the aeronautical collection, and several important individual works, such as Combarelles aux Ezyies, by Abbé Breuil and others, a book finally assigned to the Smithsonian deposit.

The work done during the year on the general catalogue of the Smithsonian library, which is kept in the office reading room, may be summarized as follows:

Volumes and pamphlets catalogued	4,509
Volumes recatalogued	264
Charts catalogued	324
Cards typed	2,157
Library of Congress cards filed	1,078
New authors added	393

MUSEUM LIBRARY

The library of the United States National Museum contains 65,148 volumes and 102,951 pamphlets, a total of 168,099. Of these, 1,457 volumes and 1,894 pamphlets were added during the year.

While most of these accessions were obtained by exchange of publications, or by purchase, many came by gift. Among the donors were Mr. W. I. Adams, Miss M. D. Ashton, Dr. Marcus Benjamin, Mr. A. H. Clark, Mr. F. W. Clarke, Dr. W. H. Dall, Mr. J. A. Gallagher, Mr. L. C. Gunnell, Dr. O. P. Hay, Dr. W. H. Holmes, Dr. A. Hrdlička, Dr. W. R. Maxon, Dr. G. S. Miller, jr., Mr. W. de C. Ravenel, Dr. C. W. Richmond, Mr. S. A. Rohwer, Mr. E. V. Shannon, Mr. R. C. Smith, Mr. B. H. Swales, and Dr. C. D. Walcott. The gifts of Secretary Walcott to the division of geology and paleontology and of Doctor Dall to that of mollusks were generous, as usual, the latter numbering 97 titles. The gifts of Doctor Richmond to the division of birds were also large. But the outstanding gift of the year was the entomological library, numbering about 4,500 volumes and pamphlets, chiefly on Coleoptera, left to the Museum by the late Col. Thomas L. Casey, and increased by the generosity of Mrs. Casey. This is one of the best collections on its subject in the United States, and contains many rare items. It will be made available to the curators as soon as possible and will be deposited in the section of insects.

In the course of the year several thousand cards of the Concilium Bibliographicum were filed, 14,329 parts of periodicals were entered, 2,623 volumes and pamphlets were catalogued, and 9,000 cards were added. Books borrowed from the Library of Congress numbered 1,628 and from other libraries 112, chiefly for the use of the

curators, and about the same number were returned. The loans totaled 8,148, of which 5,861 were made to the sectional libraries, and more than ever before to universities, such as Chicago, Illinois, Michigan, and Minnesota, and to other institutions, both in Washington and elsewhere. Many publications were consulted in the reference room, not only by members of the Museum staff but also by others, especially Government employees and scholars connected with various universities and museums, American and foreign. Two hundred and fifty-six volumes were bound.

The number of sectional libraries in the Museum is now 38. These, while under the immediate care of the administrative and scientific staffs, are at the same time very real and important parts of the general library and are administered as such. Their resources are its resources, and their needs are its needs. And these needs are often most urgent—the very ones to which the librarian feels he should give his best thought and help. The past year he has devoted much time to the study of these resources and needs, and to the solution of the problems they have disclosed. The sectional libraries are as follows:

Administration.
Administrative assistant's office.
American archeology.
Anthropology.
Biology.
Birds.
Botany.
Echinoderms.
Editor's office.
Ethnology.
Fishes.
Foods.
Geology.
Graphic arts.
History.
Insects.
Invertebrate paleontology.
Mammals.
Marine invertebrates.
Mechanical technology.
Medicine.
Mineral technology.
Minerals.
Mollusks.
National Gallery of Art.
Old World archeology.
Organic chemistry.
Paleobotany.
Photography.
Physical anthropology.
Property clerk's office.
Reptiles and batrachians.
Superintendent's office.
Taxidermy.
Textiles.
Vertebrate paleontology.
War library.
Wood technology.

TECHNOLOGICAL LIBRARY

The technological library, the division of the Museum Library which contains the collections of especial interest to the curators of arts and industries, is located in the Old Museum Building. During the year the reorganization of its material was continued. Its accessions numbered 152 volumes and 353 pamphlets, and its loans 150.

ASTROPHYSICAL OBSERVATORY LIBRARY

Additions to the library of the Astrophysical Observatory numbered 114 volumes, 32 parts of volumes, and 89 pamphlets. The number of volumes bound was 81. Exact records of loans can not be given, as they are included with those of the office library.

This is one of the most important of the smaller branches of the Smithsonian library and is much in use. Thanks to the generosity of a friend, its collections will be enlarged and made more available in the immediate future.

BUREAU OF AMERICAN ETHNOLOGY LIBRARY

The activities of the library of the Bureau of American Ethnology are described in the report of the chief of that bureau, by whom the library is administered.

NATIONAL GALLERY OF ART LIBRARY

As the National Gallery of Art is housed in the Natural History Building, its library is at present administered as a sectional library of the National Museum. This library, although possessing only 961 titles, of which 426 are volumes and 535 pamphlets, has been most carefully selected, and should grow rapidly when given room in the National Gallery Building now in prospect. Its accessions during the year were 118 volumes, 478 parts of volumes, and 52 pamphlets.

FREER GALLERY OF ART LIBRARY

The library of the Freer Gallery of Art is solely a reference library, restricted to the interests represented in the collections of art objects—that is to say, to the arts and cultures of the Far East, of India and Persia, and the nearer east; to the life and works of James McNeill Whistler and of certain other American painters whose pictures are owned by the gallery; and further, to a very limited degree, to that field of study represented by the Biblical manuscripts of the fourth and fifth centuries, which, as the possessions of the Freer Gallery, are known as the Washington manuscripts. All books and library facilities are at the service of the public. During the year 200 persons availed themselves of these privileges. Most of the more serious students came from a distance for the especial purpose of studying various parts of the collections and the books relating to them.

The library comprises about 2,200 books in English, French, German, and Dutch and almost 300 in Chinese, Japanese, and Tibetan, with necessary dictionaries. In addition, there are a good many volumes on loan from the Library of Congress. During the year 90 volumes and 127 pamphlets were added to the library.

NATIONAL ZOOLOGICAL PARK LIBRARY

Early in the year the cataloguing of the library of the National Zoological Park was completed, and its duplicates and other superfluous material were removed. Its accessions, including the old items which had been in the library for some time but which had never been entered, were 475 volumes, 1 part, and 2 pamphlets.

SUMMARY OF ACCESSIONS

The accessions for the year, with the exception of those to the library of the Bureau of American Ethnology, may be summarized as follows:

Library	Volumes	Other publications	Total
Astrophysical Observatory	114	121	235
Freer Gallery of Art	90	127	217
National Gallery of Art	118	530	648
National Zoological Park	475	3	478
Smithsonian deposit, Library of Congress	5,184	2,103	7,287
Smithsonian office	312	9	321
United States National Museum	1,457	1,894	3,351
Total	7,750	4,787	12,537

An estimate of the number of volumes, pamphlets, and charts in the Smithsonian library (including the Smithsonian deposit in the Library of Congress) on June 30, 1925, was as follows:

Volumes	507,750
Pamphlets	137,558
Charts	23,462
Total	668,770

This number does not include the many thousands of parts of volumes now in the library awaiting completion of the volumes.

SPECIAL ACTIVITIES

Besides carrying on the usual work of the year, the library staff gave as much time as possible to special problems, such as sorting accumulations of miscellaneous material in different parts of the library; bringing together superfluous duplicates and separates to be disposed of later by gift or by piece for piece exchange; inventorying the sectional libraries; making shelf lists for the two divisions of the Museum library; advancing the cataloguing of several of the special collections, particularly the Iddings, Gill, and Knab; furthering the cause of science by making part of the Lacoe collec-

tion available for semipermanent deposit with colleges, universities, and museums; and responding to many requests involving reference work for various Government departments and for institutions and individuals the country over.

Furthermore, the librarian made an extensive survey of the condition of the library and submitted a detailed report of its needs to the secretary. This survey revealed many problems pressing for solution, problems that can be solved only by a liberal increase, over a term of years, of the funds appropriated for library purposes. These increased funds should be at hand at the earliest possible moment, to the end that more than 8,000 volumes may be bound; that more than 30,000 books and pamphlets, including several almost priceless collections, may be accessioned and catalogued; that a dictionary catalogue of the entire library (including the sectional libraries), except, of course, the Smithsonian deposit, may be made; and that other urgent pieces of work connected with the reorganization and development of the library may be done—in a word, that the rich collections of the library may, by a more complete application of modern methods, be made available without undue delay to scientific workers, both in Washington and elsewhere. Then and then only will the library be ready to do its full part toward the increase and diffusion of knowledge among men.

Respectfully submitted.

WILLIAM L. CORBIN,
Librarian.

DR. CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.

APPENDIX 10

REPORT ON THE PUBLICATIONS

SIR: I have the honor to submit the following report on the publications of the Smithsonian Institution and its branches during the year ending June 30, 1925:

The Institution proper published during the year 12 papers in the series of Miscellaneous Collections, 2 annual reports and pamphlet copies of 48 articles in the general appendixes to these reports, and 6 special publications. The Bureau of American Ethnology published 1 bulletin and 2 annual reports. The United States National Museum issued 1 annual report, 2 volumes of proceedings, 2 complete bulletins, 1 part of a bulletin, 3 parts of 2 volumes in the series of Contributions from the United States National Herbarium, and 66 separates from the proceedings. The National Gallery of Art issued four catalogues of special exhibitions.

Of these publications there were distributed during the year 171,865 copies, which included 262 volumes and separates of the Smithsonian Contributions to Knowledge, 24,008 volumes and separates of the Smithsonian Miscellaneous Collections, 26,825 volumes and separates of the Smithsonian annual reports, 6,102 Smithsonian special publications, 104,596 volumes and separates of the various series of National Museum publications, 7,354 publications of the Bureau of American Ethnology, 114 publications of the National Gallery of Art, 68 volumes of the Annals of the Astrophysical Observatory, 44 reports on the Harriman Alaska expedition, 1,057 reports of the American Historical Association, and 1,435 publications presented to but not issued directly by the Smithsonian Institution or its branches.

SMITHSONIAN MISCELLANEOUS COLLECTIONS

Of the Smithsonian Miscellaneous Collections, volume 69, 1 paper was issued; volume 75, 2 papers; volume 76, 3 papers; volume 77, 6 papers; in all, 12 papers as follows:

VOLUME 69

No. 1. Smithsonian Meteorological Tables, Fourth Revised Edition. First Reprint. December 5, 1924. (Publ. 2493.)

VOLUME 75

No. 2. Cambrian Geology and Paleontology. V. No. 2. Cambrian and Lower Ozarkian Trilobites. By Charles D. Walcott. July 19, 1924. Pp. 53–60, pls. 9–14. (Publ. 2788.)

No. 3. Cambrian Geology and Paleontology. V. No. 3. Cambrian and Ozarkian Trilobites. By Charles D. Walcott. June 1, 1925. Pp. 61–146, pls. 15–24. (Publ. 2823.)

VOLUME 76

No. 11. The Freshfield Glacier, Canadian Rockies. By Howard Palmer. August 2, 1924. 16 pp., 9 pls., 3 text figs. (Publ. 2757.)

No. 12. "Adaptations" to Social Life: The Termites (Isoptera). By Thomas E. Snyder. September 2, 1924. 14 pp., 3 pls. (Publ. 2786.)

No. 13. Preliminary Archeological Explorations at Weeden Island, Florida. By J. Walter Fewkes. October 14, 1924. 26 pp., 21 pls., 1 text fig. (Publ. 2787.)

VOLUME 77

No. 1. A Chapter in the History of Zoological Nomenclature. By Leonhard Stejneger. August 30, 1924. 21 pp. (Publ. 2789.)

No. 2. Explorations and Field Work of the Smithsonian Institution in 1924. April 17, 1925. 136 pp., 138 text figs. (Publ. 2794.)

No. 3. Provisional Solar Constant Values, August, 1920, to November, 1924. By C. G. Abbot and Colleagues. February 17, 1925. 38 pp., 2 text figs. (Publ. 2818.)

No. 5. Solar Variation and Forecasting. By C. G. Abbot. June 20, 1925. 27 pp., 18 figs. (Publ. 2825.)

No. 6. Solar Radiation and Weather, or Forecasting Weather from Observations of the Sun. By H. H. Clayton. June 20, 1925. 64 pp., 45 text figs. (Publ. 2826.)

No. 7. Solar Radiation and the Weekly Weather Forecast of the Argentine Meteorological Service. By Guillermo Hoxmark. June 20, 1925. 23 pp., 5 text figs. (Publ. 2827.)

In press at close of year

VOLUME 77

No. 4. An Introduction to the Morphology and Classification of the Foraminifera. By Joseph A. Cushman. July 21, 1925. 77 pp., 16 pls., 11 text figs. (Publ. 2824.)

SMITHSONIAN ANNUAL REPORTS

Report for 1922.—The complete volume of the Annual Report of the Board of Regents for 1922 was received from the Public Printer in October, 1924.

Annual Report of the Board of Regents of the Smithsonian Institution, showing operations, expenditures, and condition of the Institution for the year ending June 30, 1922. xii+554 pp., 142 pls., 49 text figures. (Publ. 2724.)

The appendix contained the following papers:

Who will promote science? by C. G. Abbot.

Recent discoveries and theories relating to the structure of matter, by Karl Taylor Compton.

The architecture of atoms and a universe built of atoms, by C. G. Abbot.
Aeronautic research, by Joseph S. Ames.
Photosynthesis and the possible use of solar energy, by H. A. Spoehr.
Fogs and clouds, by W. J. Humphreys.
Some aspects of the use of the annual rings of trees in climatic study, by Prof. A. E. Douglass.
The age of the earth, by T. C. Chamberlin and others.
How deep is the ocean? by C. G. Abbot.
Two decades of genetic progress, by E. M. East.
Observations on a Montana beaver canal, by S. Stillman Berry.
The Republic of Salvador, by Paul C. Standley.
The tent caterpillar, by R. E. Snodgrass.
The life history and habits of the solitary wasp, *Philanthus gibbosus*, by Edward G. Reinhard.
The use of idols in Hopi worship, by J. Walter Fewkes.
Two Chaco Canyon pit houses, by Neil M. Judd.
Collections of Old World archeology in the United States National Museum, by I. M. Casanowicz.
The "Shake Religion" of Puget Sound, by T. T. Waterman.
Excavations at Askalon, by Prof. J. Garstang.
National efforts at home making, by F. H. Newell.
Ideals of the telephone service, by John J. Carty.

Report for 1923.—The complete volume of the Report of the Board of Regents for 1923 was received from the Public Printer in June, 1925.

Annual Report of the Board of Regents of the Smithsonian Institution, showing operations, expenditures, and condition of the Institution for the year ending June 30, 1923. xii+578 pp., 100 pls., 72 text figures. (Publ. 2758.)

The appendix contained the following papers:

The constitution and evolution of the stars, by Henry Norris Russell.
The sun and sunspots, 1820–1920, by E. Walter Maunder.
Joining the electric wave and heat wave spectra, by E. F. Nichols and J. D. Tear.
The possibilities of instrumental development, by George E. Hale.
The borderland of astronomy and geology, by Prof. A. S. Eddington.
Atmospheric nitrogen fixation, by Eric A. Lof.
The place of proteins in the diet in the light of the newer knowledge of nutrition, by H. H. Mitchell.
The story of the production and uses of ductile tantalum, by Clarence W. Balke.
The composition of the earth's interior, by L. H. Adams and N. L. Williamson.
Diamond-bearing peridotite in Pike County, Ark., by H. D. Miser and C. S. Ross.
Recent progress and trends in vertebrate paleontology, by W. D. Matthew.
Animals in the National Zoological Park, by N. Hollister.
The burrowing rodents of California as agents in soil formation, by Joseph Grinnell.
The natural history of China, by A. de C. Sowerby.
Life in the ocean, by Austin H. Clark.

A study of the flight of sea gulls, by R. C. Miller.
Insect musicians and their instruments, by R. E. Snodgrass.
The gardens of ancient Mexico, by Mrs. Zelia Nuttall.
The Hovenweep National Monument, by J. Walter Fewkes.
The origin and antiquity of the American Indian, by A. Hrdlička.
Ruined cities of Palestine, east and west of the Jordan, by Arthur W. Sutton.
The anthropological work of Prince Albert 1st of Monaco and recent progress in human paleontology in France, by Marcellin Boule.
The utilization of volcanic steam in Italy.
Proposed tidal hydroelectric power development of the Petitcodiac and Memramcook Rivers, by W. Rupert Turnbull.
Sir James Dewar, by Sir James Crichton-Browne.
J. C. Kapteyn, by A. Van Maanen.
Julius Von Hann, by C. G. S.

Report for 1924.—The report of the executive committee and proceedings of the Board of Regents of the Institution, and the report of the secretary, both forming parts of the annual report of the Board of Regents to Congress, were issued in pamphlet form in December, 1924.

Report of the executive committee and proceedings of the Board of Regents of the Smithsonian Institution for the year ending June 30, 1924. 14 pp. (Publ. 2792.)
Report of the Secretary of the Smithsonian Institution for the year ending June 30, 1924. 124 pp. (Publ. 2791.)

The general appendix to this report, which was in press at the close of the year, contains the following papers:

The origin of the solar system, by J. H. Jeans.
The electrical structure of matter, by Prof. Sir Ernest Rutherford.
The physicist's present conception of an atom, by R. S. Millikan.
The vacuum—there's something in it, by W. R. Whitney.
The use of radium in medicine, by Antoine Béclère.
Clear fused quartz made in the electric furnace, by Edward R. Berry.
The drifting of the continents, by Pierre Termier.
The probable solution of the climatic problem in geology, by William Ramsay.
A modern managerie; more about the National Zoological Park, by N. Hollister.
Nests and nesting habits of the American eagle, by Francis H. Herrick.
The breeding places of the eel, by Johs. Schmidt.
Cankerworms, by R. E. Snodgrass.
A botanical trip to Ecuador, Peru, and Bolivia, by A. S. Hitchcock.
Orchid collecting in Central America, by Paul C. Standley.
Sketches from the notebook of a naturalist-traveler in Oceania during the year 1923, by Casey A. Wood.
Historical tradition and oriental research, by James Henry Breasted.
Shamanism of the natives of Siberia, by I. M. Casanowicz.
Egypt as a field for anthropological research, by Prof. P. E. Newberry.
North American Indian dwellings, by T. T. Waterman.
The nature of language, by R. L. Jones.
John Mix Stanley, artist-explorer, by David I. Bushnell.
Herluf Winge, by Th. Mortensen.

SPECIAL PUBLICATIONS

Smithsonian Mathematical Tables—Hyperbolic Functions. Third reprint. Prepared by George F. Becker and C. E. Van Orstrand. December 10, 1924. 321 pp. (Publ. 1871.)

The Relations of the Smithsonian Institution to the National Government. February 5, 1925. 8 pp.

Niagara Falls: Its Power Possibilities and Preservation. By Samuel S. Wyer. January 15, 1925. 28 pp., 2 pls., 4 figs. (Publ. 2820.)

Title page and index of Volume 67, Smithsonian Miscellaneous Collections. (Publ. 2790.)

Title page and contents of Volume 74. Smithsonian Miscellaneous Collections. (Publ. 2821.)

Title page and contents of Volume 76. Smithsonian Miscellaneous Collections. (Publ. 2922.)

PUBLICATIONS OF THE UNITED STATES NATIONAL MUSEUM

The publications of the National Museum are: (*a*) The annual report, (*b*) the Proceedings of the United States National Museum, and (*c*) the Bulletin of the United States National Museum, which includes the contributions from the United States National Herbarium. The editorship of these publications is vested in Dr. Marcus Benjamin.

During the year ending June 30, 1925, the Museum published 1 annual report, 2 volumes of proceedings, 2 complete bulletins, 1 part of a bulletin, 3 parts of 2 volumes in the series Contributions from the United States National Herbarium, and 66 separates from the proceedings.

The issues of the bulletins were as follows:

Bulletin 100. Contributions to the Biology of the Philippine Archipelago and Adjacent Regions. Volume 6, part 1. Marine Diatoms of the Philippine Islands. By Albert Mann.

Bulletin 129. The Spider Crabs of America. By Mary J. Rathbun.

Bulletin 130. Life Histories of North American Wild Fowl. Order Anseres (Part). By Arthur Cleveland Bent.

Of the separate papers of the Contributions from the United States National Herbarium the following were issued:

Volume 20, part 13. Revision of the American Species of Rinorea. New Plants from Venezuela. Hemibaccharis. A new Genus of Baccharidinae. By S. F. Blake.

Volume 20, part 14. The American Species of Canavalia and Wenderothia. By C. V. Piper.

Volume 23, part 4. Trees and Shrubs of Mexico. (Passifloraceae-Scrophulariaceae.) By Paul C. Standley.

Of the separates from the proceedings, 4 were from volume 64, 15 from volume 65, 31 from volume 66, and 16 from volume 67.

PUBLICATIONS OF THE NATIONAL GALLERY OF ART

The National Gallery of Art issued during the year the following publications:

Catalogue of a collection of water-color paintings of the Grand Canyon of the Colorado, Yellowstone National Park, Yosemite Valley, Zion National Park, Utah National Park, and the Monterey Coast of California, by Mr. Gunnar Widforss. On view in the National Gallery, December, 1924, to January, 1925. 4 pp.

Catalogue of a collection of busts of prominent personages in bronze and terra cotta, by Mrs. Nancy Cox-McCormack. On view in the National Gallery, December 16, 1924, to January 16, 1925. 4 pp.

Catalogue of a collection of portraits and studies in different techniques, by Leo Katz, of Vienna, Austria. On view in the National Gallery, January 16 to February 15, 1925. 4 pp.

Catalogue of recent miniature portraits by Alyn Williams, P. R. M. S. (president Royal Miniature Society), and portrait busts in bronze and plaster, relief portraits, medallions, carvings in precious and semiprecious stones, and some great seals, by Cecil Thomas, R. M. S. On view in the National Gallery, March 3 to March 22, 1925. 8 pp.

PUBLICATIONS OF THE BUREAU OF AMERICAN ETHNOLOGY

The editorial work of the Bureau of American Ethnology is under the direction of Mr. Stanley Searles, editor. During the year, there were published two annual reports and one bulletin as follows:

Thirty-eighth Annual Report. Accompanying paper: An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians (Roth). vii, 743 pp., 183 pls., 341 figs.

Thirty-ninth Annual Report. Accompanying paper: The Osage Tribe: The Rite of Vigil (La Flesche). 636 pp., 17 pls., 4 figs. (Received July 13, 1925.)

Bulletin 78. Handbook of the Indians of California (Kroeber). xviii, 995 pp., 83 pls., 78 figs. (Received July 17, 1925.)

At the close of the year there were in press or in preparation three annual reports as follows:

Fortieth Annual Report. Accompanying papers: The Mythical Origin of the White Buffalo Dance of the Fox Indians; The Autobiography of a Fox Indian Woman; Notes on Fox Mortuary Customs and Beliefs; Notes on the Fox Society Known as "Those Who Worship the Little Spotted Buffalo"; The Traditional Origin of the Fox Society Known as "The Singing Around Rite." (Michelson.)

Forty-first Annual Report. Accompanying paper: Salish Basketry (Boas).

Forty-second Annual Report. Accompanying paper: Social Organization and Social Usages of the Indians of the Creek Confederacy; Religious beliefs and medical practices of the Creek Indians (Swanton).

REPORT OF THE AMERICAN HISTORICAL ASSOCIATION

The annual reports of the American Historical Association are transmitted by the association to the Secretary of the Smithsonian

Institution and are communicated by him to Congress as provided by the act of incorporation of the association.

Volume II, Parts I and II, of the annual report for 1919 and the supplemental volume to the report for 1921, entitled "Writings in American History," were issued during the year. The annual reports for 1920, 1921, and 1922, and the supplemental volume to the report for 1922 were in press at the close of the year.

REPORT OF THE NATIONAL SOCIETY, DAUGHTERS OF THE AMERICAN REVOLUTION

The manuscript of the Twenty-seventh Annual Report of the National Society, Daughters of the American Revolution, was transmitted to Congress, in accordance with the law, on December 8, 1924.

SMITHSONIAN ADVISORY COMMITTEE ON PRINTING AND PUBLICATION

The editor has continued to serve as secretary of the Smithsonian advisory committee on printing and publication, to which are referred for consideration and recommendation all manuscripts offered to the Institution and its branches. Five meetings were held during the year and 75 manuscripts acted upon.

Respectfully submitted.

W. P. True, *Editor.*

Dr. Charles D. Walcott,
Secretary, Smithsonian Institution.

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